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ABSTRACT

These individualized self-paced student materials for a high school/postsecondary-level course for meatcutters are one of a number of military-developed curriculum packages selected for adaptation to vocational instruction and curriculum development in a civilian setting. The five-chapter course discusses the knowledge required of meatcutters to perform their tasks efficiently. (Chapter 1 has been deleted due to military-specific materials.) Chapter 2, Operation and Maintenance of Meatcutting Equipment, covers use of knives, knife pouches, the butcher's steel, handsaws, boning hooks, dough cutters, and sharpening stones. Chapter 3, Receipt and Storage, discusses check-in procedures for meat received: in what forms beef, veal, lamb, pork, and poultry are received: and where, when, and how to store these meats. Chapter 4, Processing and Preparing Meats, discusses characteristics of meats, bone structure, meat processing, barbecuing meat and poultry, and salvaging procedures. Chapter 5, Wrapping and Pricing Retail Meat Cuts, explains proper packaging and display procedures and equipment and supplies needed. Chapter 6, Meat Department Management, covers four general areas: equipment, planning and scheduling, inspections and evaluation, and tests and pricing procedures. Contents include texts and practice exercises in each chapter, an eighty-question volume review exercise (no answers available), and practice exercise answers. (YLB)

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MILITARY CURRICULUM MATERIALS

The military-developed curriculum materials in this course package were selected by the National Center for Research in Vocational Education Military Curriculum Project for dissemination to the six regional Curriculum Coordination Centers and other instructional materials agencies. The purpose of disseminating these courses was to make curriculum materials developed by the military more accessible to vocational educators in the civilian setting.

The course materials were acquired, evaluated by project staff and practitioners in the field, and prepared for dissemination. Materials which were specific to the military were deleted, copyrighted materials were either omitted or approval for their use was obtained. These course packages contain curriculum resource materials which can be adapted to support vocational instruction and curriculum development.

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The Ohio State University
1960 Kenny Road, Columbus, Ohio 43210
Telephone: 614/486-3655 or Toll Free 800/848-4815 within the continental U.S. (except Ohio)

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Military Curriculum Materials for Vocational and Technical Education

Information and Field Services Division

The National Center for Research in Vocational Education

Military Curriculum Materials Dissemination Is . . .

an activity to increase the accessibility of military-developed curriculum materials to vocational and technical educators.

This project, funded by the U.S. Office of Education, includes the identification and acquisition of curriculum materials in print form from the Coast Guard, Air Force, Army, Marine Corps and Navy.

Access to military curriculum materials is provided through a "Joint Memorandum of Understanding" between the U.S. Office of Education and the Department of Defense.

The acquired materials are reviewed by staff and subject matter specialists, and courses deemed applicable to vocational and technical education are selected for dissemination.

The National Center for Research in Vocational Education is the U.S. Office of Education's designated representative to acquire the materials and conduct the project activities.

Project Staff:

Wesley E. Budke, Ph.D., Director
National Center Clearinghouse

Shirley A. Chase, Ph.D.
Project Director

What Materials Are Available?

One hundred twenty courses on microfiche (thirteen in paper form) and descriptions of each have been provided to the vocational Curriculum Coordination Centers and other instructional materials agencies for dissemination.

Course materials include programmed instruction, curriculum outlines, instructor guides, student workbooks and technical manuals.

The 120 courses represent the following sixteen vocational subject areas:

- Agriculture
- Aviation
- Building & Construction Trades
- Clerical Occupations
- Communications
- Drafting
- Electronics
- Engine Mechanics
- Food Service
- Health
- Heating & Air Conditioning
- Machine Shop
- Management & Supervision
- Meteorology & Navigation
- Photography
- Public Service

The number of courses and the subject areas represented will expand as additional materials with application to vocational and technical education are identified and selected for dissemination.

How Can These Materials Be Obtained?

Contact the Curriculum Coordination Center in your region for information on obtaining materials (e.g., availability and cost). They will respond to your request directly or refer you to an instructional materials agency closer to you.

CURRICULUM COORDINATION CENTERS

EAST CENTRAL
Rebecca S. Douglass
Director
100 North First Street
Springfield, IL 62777
217/782-0759

MIDWEST
Robert Patton
Director
1515 West Sixth Ave.
Stillwater, OK 74704
405/377-2000

NORTHEAST
Joseph F. Kelly, Ph.D.
Director
225 West State Street
Trenton, NJ 08625
609/292-6562

NORTHWEST
William Daniels
Director
Building 17
Airdustrial Park
Olympia, WA 98504
206/753-0879

SOUTHEAST
James F. Shill, Ph.D.
Director
Mississippi State University
Drawer DX
Mississippi State, MS 39762
601/325-2510

WESTERN
Lawrence F. H. Zane, Ph.D.
Director
1776 University Ave.
Honolulu, HI 96822
808/948-7834

MEATCUTTER
AFSC 61151

1

Correspondence Course. 1-6

Developed by:

United States Air Force

Development and Review Dates:

November 1978

Occupational Area:

Agriculture

Print Pages:

119

Availability:

Vocational Curriculum
Coordination Centers

Suggested Background:

None

Target Audiences:

Grade 11 - Adult

Organization of Materials:

Lesson objectives, readings, practice exercises and answers, review volume exercises.

Type of Instruction:

Individualized, self-paced

Type of Materials:		**No. of Pages:**	**Average Completion Time:**
Chapter 2:	Operation and Maintenance of Meatcutting Equipment	9	Flexible
Chapter 3:	Receipt and Storage	5	Flexible
Chapter 4:	Processing and Preparing Meats	64	Flexible
Chapter 5:	Wrapping and Pricing Retail Meat Cuts	5	Flexible
Chapter 6:	Meat Department Management	14	Flexible

NOTE: Chapter 1 of this volume has been omitted because of military specific materials.

Supplementary Materials Required:

None

Course Description:

This course discusses the knowledge required of meatcutters to perform their tasks efficiently. It presents directions, problems, and explanations that will teach you much of what you need to know to do your job.

Chapter 2 - Operation and Maintenance of Meatcutting Equipment - In this section, uses of knives, knife pouches, the butcher's steel, handsaws, boning hooks, dough cutters and sharpening stones are covered.

Chapter 3 - Receipt and Storage -- discusses the inchecking procedures for meat received, in what forms beef, veal, lamb, pork, and poultry are received, and where, when and how to store these meats.

Chapter 4 - Processing and Preparing Meats -- provides information on characteristics of meats, bone structure, meat processing, barbecuing meat and poultry and salvaging procedures.

Chapter 5 - Wrapping and Pricing Retail Meat Cuts -- explains proper packaging and display procedures. Covers equipment and supplies that are needed- wrapping film, packaging trays, wrapping machines and stations, scales, and scaling devices.

Chapter 6 - Meat Department Management -- deals with effective techniques for management of a commissary meat department. The four general areas covered are: (1) equipment, (2) planning and scheduling, (3) inspections and evaluation, and (4) tests and pricing procedures.

This course is designed for student self-study with text, practice exercises, (answers included at end of course), and an 80-question volume review exercise with no answers available. Please note that Chapter 1, answers to Chapter 1 practice exercises, and questions 1-8 of the final volume review exercise have been omitted because of military specific materials.

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Volume Review Exercise	107

NOTE: Chapter 1, answers to Chapter 1 practice exercises, and questions 1-8 of the final volume review exercise have been omitted because of military specific materials.

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Course 6115

MEATCUTTER

(AFSC 61151)

Volume 1

Meatcutter

Extension Course Institute

Air Training Command

11

NOTE: In this volume, the subject matter is developed by a series of Learning Objectives. Each of these carries a 3-digit number and is in boldface type. Each sets a learning goal for you. The text that follows the objective gives you the information you need to reach that goal. The exercises following the information give you a check on your achievement. When you complete them, see if your answers match those in the back of this volume. If your response to an exercise is incorrect, review the objective and its text.

Prepared by
MSgt John E. Craft
3440th Technical Training Group
Lowry Technical Training Center (ATC)
Lowry AFB, Colorado 80230

Reviewed by
Daniel H. McCalib, Education Specialist
Extension Course Institute (ATC/AU)
Gunter AFS, Alabama 36118

Preface

THE ONE VOLUME course 6115, *Meatcutter*, discusses the knowledge required of meatcutters assigned to Air Force commissaries. It presents directions, problems, and explanations that will teach you much of what you need to know to do your job. Chapter 6 refers to the managerial functions in a meat department.

If you have any questions on the accuracy or currency of the subject matter of this text, or recommendations for its improvement, send them to Lowry Tech Tng Cen/TTGX, Lowry AFB CO 80230. Questions requiring immediate resolution may be directed to the course authors at AUTOVON 926-3080, between 0800 and 1600 hours (MST), Monday through Friday. NOTE: Do not use the suggestion program to submit corrections for typographical or other errors.

If you have questions on course enrollment or administration, or on any of ECIs instructional aids (Your Key to Career Development, Behavioral Objective Exercises, Volume Review Exercise, and Course Examination) consult your education officer, training officer, or NCO as appropriate. If this agent can't answer your questions, send them to ECI, Gunter AFS AL 36118, preferably on ECI Form 17, Student Request for Assistance.

This volume is valued at 18 hours (6 points).

Material in this volume is technically accurate, adequate, and current as of November 1978.

DEPARTMENT OF THE AIR FORCE
UNITED STATES OF AMERICA

PREPARED BY
3440TH TECHNICAL TRAINING GROUP
LOWRY TECHNICAL TRAINING CENTER (ATC)
LOWRY AIR FORCE BASE, COLORADO

EXTENSION COURSE INSTITUTE, GUNTER AIR FORCE STATION, ALABAMA

THIS PUBLICATION HAS BEEN REVIEWED AND APPROVED BY COMPETENT PERSONNEL OF THE PREPARING COMMAND IN ACCORDANCE WITH CURRENT DIRECTIVES ON DOCTRINE, POLICY, ESSENTIALITY, PROPRIETY, AND QUALITY.

6.

Operation and Maintenance of Meatcutting Equipment

SOME YEARS AGO an instructor at an Air Force school was operating a bandsaw. He was not using the safety guard, because he was so sure of himself. He had only one more cut to make before completing his project. Suddenly he let out a piercing yell. The blade had cut more than an inch into his hand between his thumb and index finger. Fortunately, the doctor at the hospital was able to sew up his wound. Some tendons were so severely cut that it was 6 months before he could fully open his hand. This accident shows your great need to follow safety precautions.

In this chapter, we will discuss: (a) handtools, (b) powered equipment, (c) sanitation, and of course (d) safety. Naturally you want to avoid such accidents as the one just described. To do this, you must learn the proper procedures. When in doubt, ask experienced meatcutters or your supervisor before making false moves.

2-1. Handtools

In this section, we will talk about knives, knife pouches, the butcher's steel, handsaws, boning hooks, dough cutters, and sharpening stones. Each tool has its use.

006. Given a list of handtools, match each with its appropriate characteristics.

Knives. Knives are used more than any other handtool. As we talk about each of them, notice the differences in appearance among them, given in figure 2-1, and try to understand why these differences are important.

Steak knives. Steak knives are long and broad (see fig. 2-1). This knife is used for cutting boneless cuts of meat, such as top round steaks and sirloin tip roasts. Notice that the bevel, the part slanting away from the edge, is wider than the bevel on the boning knife. This wider bevel permits cleaner, smoother cuts resulting in steaks and roasts without jagged edges.

Boning knives. Look at the boning knife at the bottom of figure 2-1. It is shorter with a narrow bevel. With this knife you can cut close and along bones, through joints, and trim and remove meat near bones. The narrow bevel on boning knives practically eliminates nicks by bones along the cutting edge.

Sharpening Stone. The sharpening stone is a multiple stone, having three sides (coarse, medium, and fine) mounted in a case with an oil reservoir in the base. Figure 2-2 shows a meatcutter sharpening a knife. To put a new stone in use, do three things: (1) place the new stone in oil for several hours, (2) fill the reservoir with oil, and (3) rotate the stone, so that each side is properly oiled. Only mineral oil is used, and it must be changed frequently. Handle the stones carefully to prevent nicking and chipping.

Sharpening knives on stone. Refer again to figure 2-2. In this picture, the first stroke in knife sharpening has just been completed. Begin on a coarse stone by placing the heel of the knife at the upper end of the stone and then draw the whole blade, from heel to tip, across the full length of the stone. This sharpens one side of the blade. Now turn the knife over and start at the opposite side of the stone, drawing the knife across the full length of the stone, thus sharpening the other side of the blade. Repeat until you have the required feather edge; then perform the same steps on a finer stone (remember that the unit has coarse, medium, and fine stones). To provide a wide bevel for a steak knife, hold the blade at a slight angle. To provide a narrow bevel for a boning knife, hold the blade at a somewhat greater angle. Immediately after sharpening a knife, straighten the knife edge on the steel. To sharpen the knife smoothly and evenly and to provide uniform wear on the stone, draw the blade across the full length of the stone.

Butcher's Steel. The butcher's steel is a round, magnetized steel shaft with a handle and a guard between the handle and the steel. It is used only to

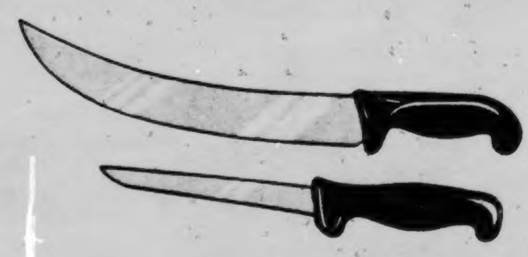


Figure 2-1. Meatcutting knives.

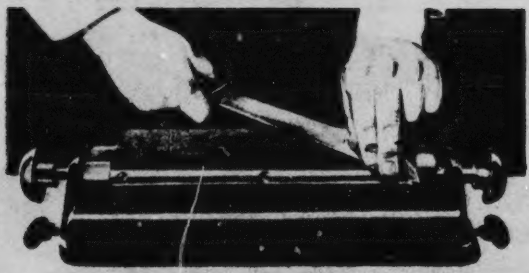


Figure 2-2. Sharpening knife on stone.

straighten the cutting edge of knives. Notice figures 2-3,A, B, and C as we discuss the instructions for using butcher's steel.

Figure 2-3,A. Hold the steel in the left hand with the point upward and slightly away from the body. Place the heel of the blade against the far side of the steel, keeping the blade at the same angle as the bevel.

Figure 2-3,B. Bring the entire blade edge down across the steel toward the left hand with a quick swinging motion of the wrist, so that the tip of the blade makes an arc crossing the steel near the guard. The entire length of the blade edge should pass lightly over the steel.

Figure 2-3,C. Bring the blade into position again, but with the opposite side of the blade edge against the rear side of the steel and at the same angle as before. Repeat the motion of the right wrist, again passing the entire blade edge over the steel. Repeat the complete operation until the knife cutting edge is straight.

Handsaw. The handsaw has a frame with a narrow, removable blade. Substitute a new blade when the old one becomes dull. Use the handsaw for cutting through bones. For instance, first slice the meat with a steak knife to near the bone, then saw through the bone and use the knife to complete the separation process.

Boning Hook. This tool is a curved metal hook attached to a T-handle. Use the boning hook to hold meat steady during boning or breaking. The hook saves time and eliminates to a certain extent the danger of cutting yourself, since it enables you to secure a firm grip on the meat.

Dough Cutter. This tool is a thin piece of steel with a cleat handle across the full length of one side. Use the cutter to scrape the fat and meat particles from the top of meatcutting tables.

Knife Pouch. The knife pouch is a metal case that holds your knives and steel. The pouch is strapped to your waist by a belt and is hung on your working hand side. The pouch serves a double purpose. It enables you to have your tools handy and promotes safety by keeping knives off cutting surfaces where they may cause accidents.

Exercise (006):

1. Match each tool found in column B with its appropriate characteristic, given in column A, by writing each numbered tool (column B) beside its related lettered characteristic (column A). NOTE: Each tool in column B may be used more than once.

	Column A	*Column B*
_____	a. Straightens knife edge.	1. Boning knife.
_____	b. Wide bevel.	2. Dough cutter.
_____	c. Holds meat steady while boning.	3. Butcher's steel.
_____	d. Trims around bones.	4. Steak knife.
_____	e. Keeps tools handy.	5. Boning hook.
_____	f. Scrapes table tops.	6. Handsaw.
_____	g. Cuts through bones.	7. Knife pouch.
_____	h. Use mineral oil.	8. Sharpening stone.
_____	i. Double purpose.	
_____	j. Three sides.	

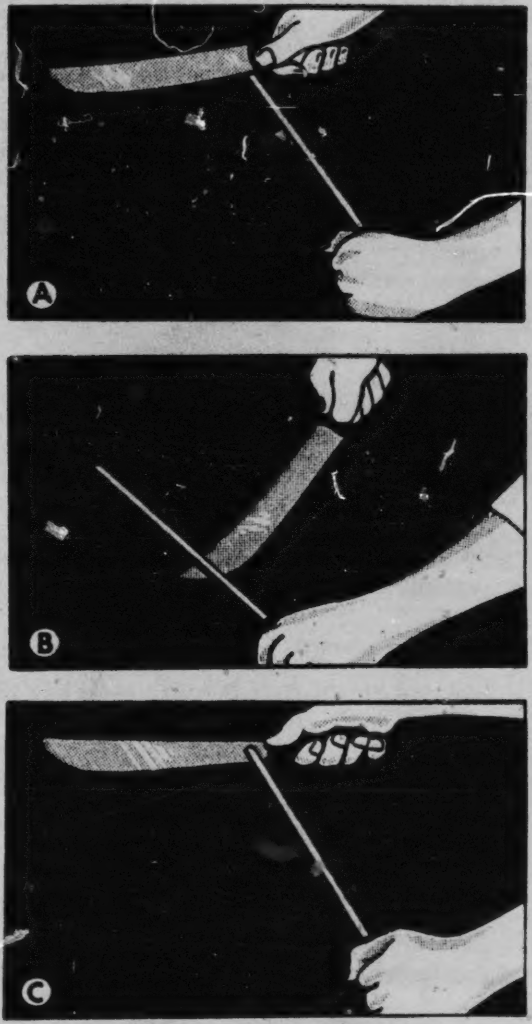


Figure 2-3. Steeling a knife.

2-2. Powered Meatcutting Equipment

Powered meatcutting equipment includes meat grinders, meat slicers, tenderizers, and handsaws. Since these units are commercial machines you may find that you machines vary in detail from the ones we will discuss. Consult manufacturer's manuals for details and variations. Operate these machines only under the supervision of an experienced meatcutter until you become proficient.

007. Supply missing information to complete selected statements pertaining to the operation of selected pieces of powered equipment.

Meat Grinder. The meat grinder is an electric power-operated machine for grinding boneless meat. It consists of two sections: (1) the power section and (2) the grinder section.

Power section. The main parts of the power section are the metal base, motor, gears, and drive shaft.

Grinder section. The grinder section consists of the hopper, feed tray, worm, grinder plate, and knife. The meat is fed into the hopper from the feed tray that has a safety guard attached to an opening, which fits over and is attached to the top of the hopper. Below the hopper opening is the feed worm, which forces meat against a perforated plate. A blade attached to the end of the worm revolves against the plate, cutting the meat as it is forced through the plate.

Operation. To operate this tool be sure to remove all bones from the meat and cut it into thin strips before grinding it. Never grind frozen meat or run the grinder when it is empty. Using thin strips of meat reduces the danger of overheating and overloading the grinder. Frozen meat will also overload it.

Meat Tenderizer. The meat tenderizer is an electric gravity fed machine for tenderizing steaks. It consists of a rigid metal housing enclosing the motor, cutting groups, and a hopper or feed tray. The cutting group consists of roller-type serrated cutting knives and stripper combs. The machine has a safety interlock switch to prevent operation during cleaning or at any time when the hopper is open.

Meat Slicer. This machine is a gravity fed portable slicer designed for slicing cold cuts and can be semi-automatic or automatic. It provides uniformity and speed in slicing with a minimum of waste. Slicers are made of either porcelain or stainless steel and are built to hold all of the necessary devices for efficient operation and safety. The meat is placed on the feed carriage (shown in fig. 2-4) and fed to the cutting knife by gravity. The carriage is pushed toward the rear of the machine, coming into contact with the blade. The slicer has a thickness control knob and a thickness indicating scale used to adjust the thickness of slices. The end slice plate is used to hold the meat stationary while slicing. It also reduces the chances of your cutting your finger. Observe the sharpening attachment shown in figure 2-4. The sharpening attachment has two circular sharpening stones that can be manually engaged to the edge of the cutting knife for sharpening.

Bandsaw. Notice the bandsaw pictured in figure 2-5. Assume that you are cutting meat with this saw. First, adjust the meat gauge plate to desired thickness. Second, place meat to be cut on the meat carriage, pushed firmly against the gauge. While standing in front of the machine make the necessary cuts by turning the switch on and pushing the meat and carriage toward the blade.

Exercises (007):

Fill in the blanks in items 1 through 5, which follow:

1. The worm, plate, and knife are all parts of the ____________ section of the meat grinder.
2. Cutting the meat into thin strips for grinding may keep the grinder from ____________ .
3. The most important safety device on the meat tenderizer is the ____________ .
4. The ____________ ____________ ____________ on the meat slicer keeps the meat stationary.
5. The first thing to do when operating the bandsaw is to adjust the ____________ ____________ ____________ .

2-3. Meat Department Layout

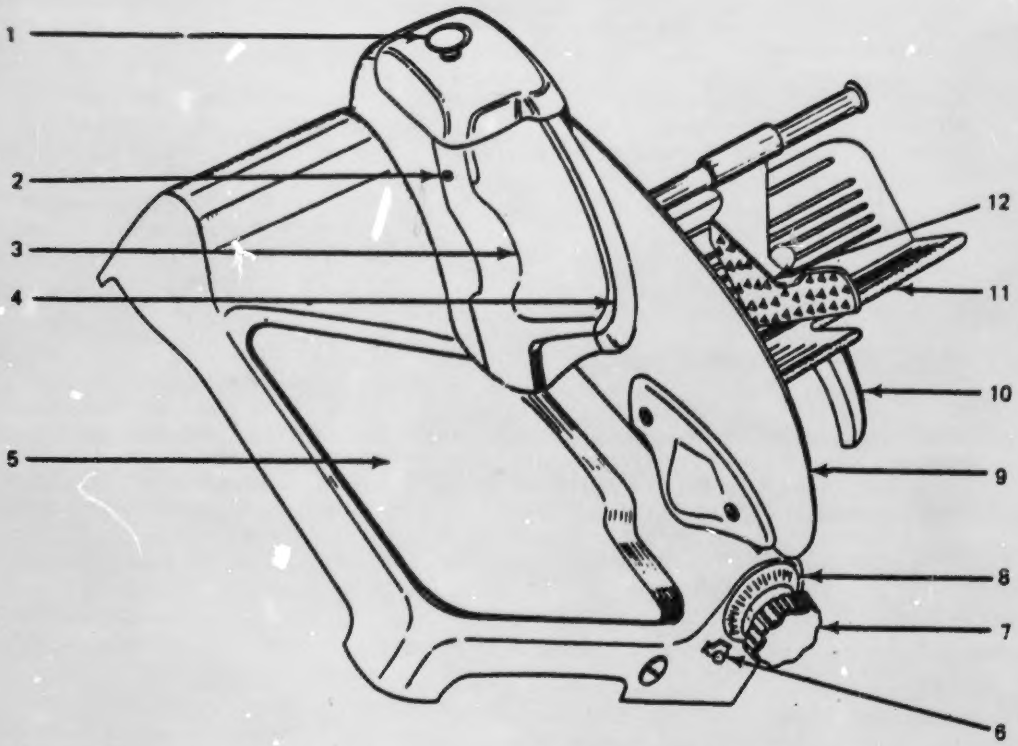
You may be required to layout and arrange equipment in a commissary meat department. For efficient operation, you must consider the several factors covered next.

008. Identify given statements pertaining to meat department layout as either true or false.

Equipment Arrangement. Space is the most important consideration when arranging equipment. Figure 2-6 is a diagram of a typical meat department in a 31,500 square food commissary. Study figure 2-6 carefully, giving attention first to the physical space required. The principal rooms involved in processing meat are 16, 17A, 17B, and 18.

Carcass beef storage. Carcass meat is received through the outside door of the storage room, and remain there until time for processing. The proper portions of meat is then moved by rail into the processing room where it is cut into retail cuts.

Meat processing room. Notice the meat rail that runs from the storage room to the two meat saws in the processing room. The purpose of the rail



1. SHARPENING ATTACHMENT.
2. SLICE DEFLECTOR PINS.
3. SLICE DEFLECTOR.
4. CUTTING KNIFE.
5. RECEIVING TRAY.
6. MOTOR SWITCH.
7. THICKNESS CONTROL KNOB.
8. THICKNESS INDICATING SCALE.
9. THICKNESS GAUGE PLATE.
10. FEED CARRIAGE GRIP.
11. FEED CARRIAGE.
12. END SLICE PLATE.

Figure 2-4. Meat slicer.

is to eliminate unnecessary carrying of heavy wholesale meat items. At this point the carcass meat is processed into retail cuts, utilizing the meat saws and trim tables. The retail cuts of meat are trimmed, cleaned of bone dust, trayed, and moved to the meat wrapping room. Also located in the processing room are the meat grinder, tenderizer, and patty machine.

Meat wrapping room. The wrapping room is set up to accomodate both automatic wrapping and labeling machine, and handwrapper. The handwrapper is used to wrap bulky meat items such as roast or hams. The slicer is located in a convenient location for slicing hams or luncheon meats for customers. After wrapping and labeling the retail cuts of meat, move them to the restocking aisle and arrange in the display case.

The equipment in figure 2-6 is arranged in such a manner that distance between preparation points are minimized, and consequently processing time is also at a minimum.

Exercises (008):

Identify each statement in exercises 1 through 4 as true or false.

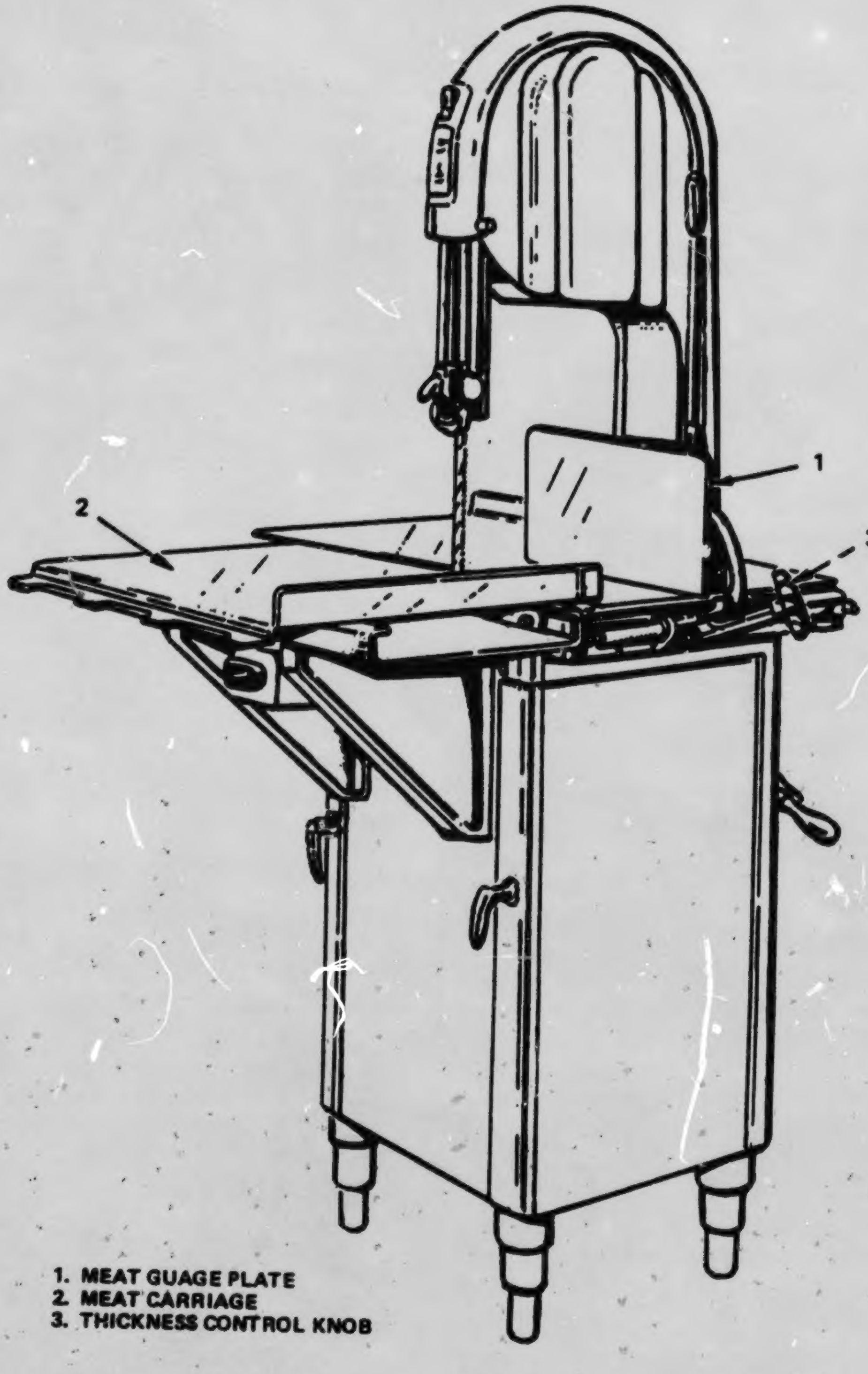
___ 1. Beef quarters are handcarried from the storage room to the meat saw for processing.

___ 2. Equipment should be arranged in such a manner as to eliminate excess time and energy.

___ 3. The meat slicer should be located in the meat processing room.

___ 4. Retail cuts of meat are trayed in the processing room.

10



1. MEAT GUAGE PLATE
2. MEAT CARRIAGE
3. THICKNESS CONTROL KNOB

Figure 2-5. Meat bandsaw.

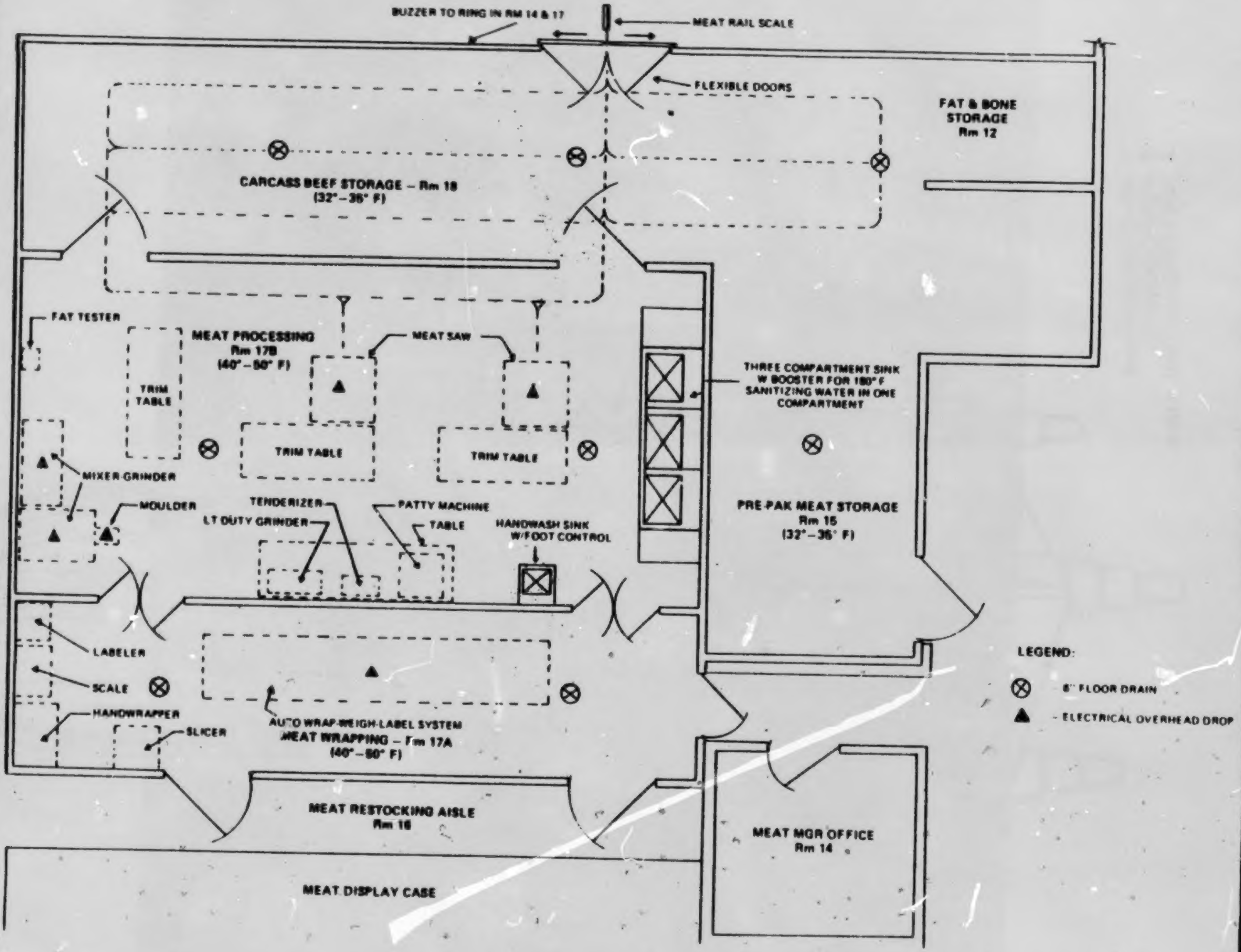

BUZZER TO RING IN RM 14 & 17
MEAT RAIL SCALE
FLEXIBLE DOORS
FAT & BONE STORAGE Rm 12
CARCASS BEEF STORAGE – Rm 18 (32° – 36° F)
FAT TESTER
MEAT PROCESSING Rm 17B (40° – 50° F)
MEAT SAW
TRIM TABLE
TRIM TABLE
TRIM TABLE
THREE COMPARTMENT SINK W BOOSTER FOR 180° F SANITIZING WATER IN ONE COMPARTMENT
MIXER-GRINDER
MOULDER
TENDERIZER
PATTY MACHINE
LT DUTY GRINDER
TABLE
HANDWASH SINK W/FOOT CONTROL
PRE-PAK MEAT STORAGE Rm 15 (32° – 36° F)
LABELER
SCALE
HANDWRAPPER
SLICER
AUTO WRAP-WEIGH-LABEL SYSTEM
MEAT WRAPPING – Rm 17A (40° – 50° F)
LEGEND:
⊗ - 6" FLOOR DRAIN
▲ - ELECTRICAL OVERHEAD DROP
MEAT RESTOCKING AISLE Rm 16
MEAT MGR OFFICE Rm 14
MEAT DISPLAY CASE

Figure 2-6. Meat processing layout diagram.

2-4. Safety

Safety is vital to you and the successful operation of a meat department. We will discuss safety as it pertains to the following:

- Handtools.
- Powered equipment.
- Processing areas.

009. Identify selected safety precautions pertaining to the meat department by completing statements about each.

Handtools. Use handtools for their intended purpose only. Do not, for instance, try to cut through a joint with a steak knife—use a boning knife. Safety aprons and metal mesh gloves must be worn when using knives. Even experienced meatcutters may make serious errors. For this reason an apprentice, such as yourself, and also experienced meatcutters, must use this safety equipment. Although using safety aprons and gloves reduces the chances of an accident, be extremely careful while using knives. Meatcutting requires a large amount of concentration. While cutting and boning meat, always cut away from you. Know where your knives are at all times. Do not, for instance, leave your knives on the cutting table, where they may be accidently covered with meat. This could cause a serious injury. Always keep knives not being used in your knife pouch or storage rack.

Injuries may also be avoided by wearing the required hard hats and safety shoes. But wearing these safety devices does not completely prevent accidents or injury. To make safety work, you must do your part. Therefore, be careful when removing or storing meat on rail hooks. Remove, clean, and store hooks not in use. Work efficiently and quickly as you safely can without taking chances. Take enough time to be safe.

Powered Equipment. After reading the introduction to this chapter, you must realize the importance of using powered equipment safely. Therefore, always use guards and guides when operating this machinery, and do not tamper with safety interlock switches. They are there for your protection. Metal mesh gloves should not be worn while operating powered equipment. Adjust meat saws or slicers to the desired thickness before turning on the power. Never, for any reason whatsoever, put your hands in or near the grinder hopper while the machine is running. If you are in doubt about the operation of any powered equipment, ask an experienced meatcutter or your supervisor. After you make a mistake it's too late.

For safety's sake, it is everyone's duty to notice faulty or exposed electrical power cords. Electrical outlet should be firmly secured and have adequate protective covers. Ground wires should be installed where required. When cleaning any powered equipment, always turn off the power at the switch box or remove the plug from the outlet.

Processing and Storage Areas. Cluttered work and storage areas are one of the most common causes of accidents. Therefore, keep floors clear of debris, equipment, and supplies. Also, clean meat, fat, water, and blood drippings from work area floors.

Storage areas. Safety alarms are in refrigerated rooms and can be activated if you are accidently locked in. In addition to this, there are also fire axes inside refrigerators. Ice on floors of storage areas are safety hazards. If you notice ice on floors, remove it and prevent accidents. Be aware of improper storage techniques, so that you are not injured by falling boxes or protruding box edges. Notify your supervisor in case of sharp edges or protruding nails in the storage areas. Last but not least, there are right ways and wrong ways to lift heavy boxes or wholesale cuts of meat. Learn the right way and prevent injury to yourself. This means if at all possible, use your legs in lifting, not your back.

Exercises (009):

Complete the remainder of each safety precaution in exercises 1 through 11 below.

1. Use handtools only for their ____________.

2. The four safety devices to use while boning meat are (1) ____________ (2) ____________ (3) ____________ and (4) ____________.

3. While using knives, always cut ____________ from you.

4. When knives are not being used, keep them in your ____________ or ____________.

5. Remove, clean, and store meat ____________ not in use.

6. Use ____________ and ____________ while operating powered equipment.

7. Do not tamper with ____________ on powered equipment.

8. The one safety device that is not worn while operating powered equipment is the __________.

9. It is your duty to notice __________ electrical cords and outlets that are not __________ or without protective __________.

10. In the case of accidently locking yourself in refrigerated rooms, __________ and __________ are installed.

11. When lifting heavy objects, use your __________ not your back.

2-5. Sanitation and Cleanliness

Sanitation is a must in all meat department areas. Good sanitation standards not only improve the appearance of the department, but also reduces loss of meat and protects the health of both department personnel and customers. We will consider sanitation from the aspects of equipment, department areas, and personnel.

010. Identify selected cleaning procedures in the meat department.

Sanitation. The meat department must comply with the applicable sanitary requirements of AFR 163-8, *Control of Food Borne Disease,* and be kept scrupulously clean. To keep the standards of sanitation required, the meat department must have an ample supply of hot water, heated to 170° F or higher. Use detergents and sanitizing solutions for their intended use and strictly in accordance with the manufacturer's recommendations. Meat, blood, and offal are subject to rapid bacteria growth and germ development if not properly controlled.

Handtools. Clean knives, steels, meat saws, boning hooks, mesh gloves, safety aprons, and sanitary knife racks daily. Wash tools individually in warm water and detergent. Then rinse and sanitize them in hot water. If you notice cracks and crevices in plastic handled handtools, notify your supervisor. In this case, he will replace the handtools. Meat and fat accumulate in cracks and crevices and are breeding areas for bacteria growth.

Power operated equipment. All metal parts of powered equipment that come into contact with meat are thoroughly washed, rinsed, and sanitized at the end of business each day. Be careful to prevent water from coming into contact with the motor or electrical connections. After cutting raw pork or poultry always clean and sanitize the equipment before reuse, if the machine is also used for processing beef.

Processing area. Scrub the processing area floors with a warm detergent or washing powder solution at the end of each day. To aid in keeping floors clean, rubber like mats of solid composition or heavy paper or cardboard are sometimes used on the floor. Remove this material daily and thoroughly wash, sanitize, and steam clean the floors.

Storage areas. As often as necessary, wash and clean all refrigerated rooms and refrigerators. On a weekly basis, empty and clean all meat display cases. Wash with an approved detergent, rinse, sanitize, and air-dry meat hooks and trays weekly. Heavy paper or cardboard are sometimes used on the storage room floors, but it must be removed when the floor is cleaned.

Do not allow meat, meat products, and poultry to remain out of refrigerated rooms, boxes, or display cases longer than is necessary for processing and cutting.

Cutting tables. Use plastic or hard rubber cutting boards on top of the cutting table when cutting meats with tools other than small knives, and in particular when cutting bones using a handsaw. When the table develops cracks, crevices, or cuts it will be replaced or repaired. Do not use the cutting table for storage or keep meat on the table longer than necessary. The processing room temperature is higher than the storage room, and over an extended period of time bacteria will grow. Frozen meat is not allowed to thaw on the cutting table. Thoroughly clean cutting tables at the close of business each day with hot water, a detergent approved for meat contact surfaces, and a stiff, clean bristle brush. The base veterinarian or his representative may recommend other measures to keep the surfaces in a sanitary condition.

Scales. Clean scales with a damp cloth daily or more often as required. Place paper on the scale before weighing delicatessen meats.

Exercises (010):

Complete items 1 through 7 by supplying the missing words.

1. To keep the standards of sanitation required in the meat department, water heated to __________ degrees F must be available.
2. In case of cracks and crevices in plastic handled handtools, your supervisor will __________ them.
3. Equipment used to cut __________ or __________ is cleaned and sanitized before it is reused.
4. If heavy paper or rubber mats are used on the processing area floor, __________ this material and clean the floor daily.
5. Thoroughly clean the meat display cases once a __________.

6. Use __________ on the cutting table when using handsaws.
7. Place __________ on the scales when weighing delicatessen meats

011. List the three standards of personal cleanliness and tell why meatcutters are more subject to certain ailments than are other personnel.

Cleanliness and Grooming. You are expected to be close-shaven, keep your hair trimmed, and to keep your hands clean at all times. Keep your fingernails short and clean, and wash your hands frequently and always after using the restroom.

Clothing. Meatcutters are furnished white smocks, trousers, and aprons. This special purpose clothing is worn on the basis of duty requirements and only this type of clothing is permitted when on duty. When your smock or apron becomes soiled, exchange it for a clean one.

Health. If you have a cold, sore throat, skin infection, or other ailments, do not wait, go to the dispensary. You may contaminate the meat and infect other personnel as well. Get plenty of rest, eat properly, and protect your health. When working in temperatures ranging from 0° to 50° F, you are more subject to colds and similar ailments than you would be in many other jobs.

Exercises (011):

1. List the three standards of personal cleanliness.

2. Why are you, in your job, more subject to colds and similar ailments than those working elsewhere?

012. List the areas of the meat department that the veterinarian inspects and state why he must be present when meat is received.

Facilities Inspections. The base veterinarian or his representative inspects periodically the meat department. His inspection includes sanitation of the processing area, equipment, display cases, and all storage areas. He checks personnel on duty for haircuts and cleanliness. During his inspections he may administer individual swab test of meatcutters hands. This test will reveal germs on their hands that can be eliminated by frequent washing. He checks for outdated code dates of meat items and discolored meats on display. All refrigerated areas are checked for proper temperatures. Food handler cards are reviewed, and if necessary, the individual may be scheduled for re-examination.

Meat Inspections. When meat is received, the veterinarian or his representative must be present to inspect the condition and proper temperature of the meat. He insures proper receiving temperatures for beef (28–40°) and poultry (28–36° F). Through these series of inspections the veterinarian achieves his objective of eliminating the spread of infectious diseases.

Exercises (012):

1. List the areas of the meat department that the veterinarian inspects.

2. Why must the veternarian or his representative be present when meat is received?

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CHAPTER 3

Receipt and Storage

IN THIS CHAPTER, we will discuss the inchecking procedures for meat received, in what forms beef, veal, lamb, pork, and poultry are received, and where, when, and how to store these meats. You are expected to note temperatures in storage areas and display cases and know what to do if such temperatures are too low or too high.

3-1. Receipt

You are concerned primarily with three sources of supply for meat items. These sources are the commissary warehouse, base procured items from local vendors, and the Defense Personnel Support Center (DPSC).

013. Supply the missing information for selected statements regarding inchecking of meats.

Inchecking. The store manager designates, in writing, incheckers who are responsible for receiving all meat. Several individuals are designated, so that at least one will be present when deliveries are made.

Receiving meat from the commissary warehouse. Your tasks as an inchecker is to meet the warehouse truck and receive, from delivery men, three copies of AF Form 129, Tally In-Out, listing the types and quantities of meat delivered. Each item has been weighed and recorded on the form. Check off each item to be sure everything is accounted for. After checking the meat received, and if the delivered items coincide with the AF Form 129, sign copies one and three of the form. Turn all three copies over to the meat department supervisor. He forwards copies one and three to the commissary accounting office and retains copy two for his files. You and other meatcutters then store the meat.

Carcass meats. Most of the beef you will process will be from beef carcass. Commissaries are limited to the amount of primal, subprimal, and commissary ready beef to no more than 20 percent of total beef requirements. The primary source of carcass beef and primal cuts is DPSC. Only emergency fill-in requirements are procured direct from vendors of commercial sources. Weigh 100 percent of the carcass meats received from any source. When a variance exists between actual net weight and weight shown on the tag supplied by the vendor, or when such a tag is not attached to the carcass, mark each tag with the actual net weight. Carcasses are received, accounted for, and inventoried at the marked net weight.

Exercises (013):

Complete exercises 1 through 4 by filling in the correct information.

1. The __________ __________ designates the incheckers responsible for receiving meats.
2. __________ copies of AF Form 129 are used for receiving meat from the warehouse.
3. The primary source of beef for the commissary is __________ .
4. __________ percent of carcass meat is weighed when received.

3-2. Storage

After receiving the meat, you store it in chill rooms or freezers until time for processing. Proper temperatures and code dates must also be observed.

014. Distinguish among a series of true/false statements concerning meat storage.

Chillroom Storage. When received, most of the meat is stored in the chillroom. However, different types of meat require individual storage techniques. This is discussed here.

Storage on Hooks. Quarters and whole carcasses of beef, veal, and lamb are stored on meat hooks, which are moved along rails from the unloading dock into the chillroom. In using these hooks in this way, rotate meat remaining from previous deliveries in order to insure first use of meat still on hand. If there is no meat on hand, however, place the newly delivered at a point from which it can be moved easily into the processing room. To permit proper air circulation, allow ample space between the quarters or carcasses.

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Boxed Meats. Meats received in boxes are stacked in the chillroom on dunnages. To insure that air can circulate freely, stack the boxes 2 inches from the floor, 4 to 6 inches from the wall, and a minimum of 24 inches from the ceiling. Segregate and mark all shipments, so that the oldest products are used first.

Poultry. All poultry sold in the meat department are fresh and are usually received prepackaged. You must exercise extreme caution when storing fresh poultry, because of its rapid spoilage rate. In fact, this particular item has a storage life of only 5 days. Store ice packed chickens in crushed ice containers with drains to the outside.

Freezer Storage. Although most of the meat items received and sold in the meat department are in a chilled state, there are exceptions. Under some circumstances (such as commissaries overseas) beef, pork, and prepackaged meats may be received frozen. When storing items in the freezer, use the same rotation and stacking procedures as for chillroom storage. Frozen beef may be tempered in a chill box at 32° to 35° F to an internal temperature of 28° to 30° F. Process and sell the beef chilled. Display a sign informing customers that the beef has been frozen before and refreezing will not affect wholesomeness but will lower quality.

Exercises (014):
Identify exercises 1 through 5 as being either true or false.

_____ 1. Beef quarters are stored as close together as possible to utilize all existing space.
_____ 2. Boxes of meat are stacked 2 inches from the floor, 4 to 6 inches from the wall, and a minimum of 24 inches from the ceiling.
_____ 3. Both frozen and fresh poultry are sold in the meat department.
_____ 4. Ice packed chickens are stored in crushed ice containers for not more than 4 days.
_____ 5. Beef received frozen may be tempered prior to processing.

015. Provide missing information in incomplete statements regarding code dates for chilled prepackaged meats.

Code Dates. Many meat items received and sold in the meat department are prepackaged. Only the fresh and best quality prepackaged meat are sold, and to insure freshness and quality, code dates are used on each package.

Types. The three types of code dates are as follows:

a. Dates of pack or manufacture are those to which recommended shelf-life may be added to determine safe keeping time.

b. Pull dates are those in advance of dates of pack or manufacture beyond which an item should not be offered to a consumer.

c. Quality assurance dates are those subsequent to dates of pack or manufacture beyond which the level of quality initially provided can no longer be assured.

Systems. Dates are normally set to assure reasonable time for sale and holding by the customer. Systems used to identify these dates vary by producer. The three common types of systems used are as follows:

a. The standard AMI system requires use of four numerics. The sum of the two outside digits equals the month, while the two inside digits indicate the day; for example, 0154 (April 15).

b. The revised AMI system also requires use of four numerics. However, the first two, reading from left to right, represent the month, while the last two indicate the day; for example, 0415 (April 15).

c. The last system is the alpha numerical system, which requires use of the first three letters of the month, followed by two numbers indicating the day; for example, APR 15.

Standards. The commissary and base veterinarian are furnished a complete index of code dates, plus an explanation of both the type code and dating system used. The open-dates or the alpha system are encouraged. To insure that customers have a reasonable home storage period, the following criteria applies.

a. Vacuum packaged smoked hams and slab or sliced bacon must be delivered with a remaining shelf life of 21 days based on pull dates or an quality-assurance dates, or within 15 days after packaging.

b. Fresh chilled pork sausage must be delivered within 72 hours after packaging, except that which has an established shelf life of 21 days or more may be delivered as much as 7 days after packaging.

c. All other chilled prepackaged meats must be delivered within 5 days after packaging.

Exercises (015):
In exercises 1 through 7, insert the correct word or words to complete each statement.

1. Code dates that are in advance of dates of pack or beyond which an item should not be sold, are called ____________ dates.
2. ____________ ____________ dates are subsequent to dates of pack or manufacture beyond which the level of quality initially provided can no longer be assured.
3. The code dates to which recomended shelf life may be added to determine safe keeping time are called ____________ of ____________ .
4. If a package had 0172 as a code date under the standard AMI system, the date would be ________.
5. If a package had MAR 12 as a code date, the date system would be the ____________ .
6. A package, code dates 0320 under the revised AMI system, would be dated ____________ .
7. Sliced bacon and vacuum packaged smoked hams must be delivered with a remaining shelf life of ____________ days, or within ____________ days after packaging.

016. Associate given correct temperature ranges with selected appropriate refrigerated areas and state how these temperatures are recorded.

Temperature Control. Temperature control within the meat department is vital. In warm temperatures, germs multiply and meat spoils rapidly. Proper temperatures retard spoilage and prevent damage to meat quality. In this objective, we will discuss the proper temperatures for the chillroom, freezer, processing room, and display cases as well as how often these temperatures are recorded.

Chillroom. The chillroom is maintained at a temperature of 32° to 35° F, with the least possible fluctuation. The temperature of this room should not be permitted to go below 32° F, because the slow freezing action will cause discoloration of the surface of meat items and will adversely affect quality. Fresh pork and poultry have an extremely limited storage life. These products are stored in the coldest part of the chillroom.

Freezer room. The freezer storage room is maintained at a temperature of 0° to -10° F, with the least possible fluctuation. Frozen items received in a slightly defrosted condition, if accepted by the veterinarian, are refrozen without delay to prevent spoilage.

Processing room. The meat processing and preparing areas are refrigerated to the extent that maximum temperature does not exceed 50° F at any time. Temperatures in excess of 50° F promote bleeding and hasten discoloration. The meat processing room should never be used as a defrosting area.

Display cases. Meat department display cases are operated at temperatures commensurate with the requirements of the major group of articles in the case. In open type display cases, the temperatures normally are maintained at 28° to 33° F. Cheese and dry sausage are displayed at 36° to 40° F. The closed type cases are operated at a temperature of 32° to 34° F. If cases are arranged so that one part of the space is colder than other parts, fresh pork cuts and all types of liver are displayed in the coldest section. Display cases are checked frequently for proper temperatures.

Temperature Recordings. Temperature recordings are maintained on all refrigerated rooms. Where automatic temperature recording devices are not available, thermometers are used. The thermometer should be located about 5 feet above the floor and away from the cooling coils or other metal surfaces. Thermometers with metal backs should be mounted on wooden surfaces.

Operating temperatures are checked at least twice daily—at the beginning of the day and at the end of the day. If you find any abnormal temperatures, do not try to repair the unit yourself, but notify your supervisor, who will call the proper contract maintenance. Temperature charts are posted on the outside of each walk-in box and temperatures recorded.

Exercises (016):

1. Match each appropriate refrigerated area, found in column A, with its related temperature range, given in column B, by writing each numbered area (column B) beside its corresponding lettered range (column A). NOTE: Each item in column B may be used only once.

	Column A *Temperature Ranges*	*Column B* *Refrigerated Areas*
_____	a. 0° to -10° F.	1. Display case open—cheese, dry sausage.
_____	b. 32° to 34° F.	2. Processing room.
_____	c. 50° F maximum.	3. Freezer room.
_____	d. 32° to 35° F.	4. Display case open (normal).
_____	e. 36° to 40° F.	5. Chillroom.
_____	f. 28° to 33° F.	6. Display case closed (normal).

2. State how and when the temperatures in exercise 1 are recorded.

017. Associate significant approximate keeping times with various frozen meat items, identify factors affecting storage life, and give solutions to removing mold from hams.

Keeping Time. For various keeping time for assorted frozen stored meat items, refer to figure 3-1, which we will examine next.

Cured and smoked meats. The keeping qualities of cured and smoked meats depend upon the type of cure, the length of the smoking period, and the method of packaging. The storage life of such items is further influenced by the condition of the storeroom with regard to humidity, temperature, and sanitation.

Growth of mold and development of rancidity in hams and bacon can be retarded by stowing them in the chill space for current consumption and in the freezer for seasonal stocks. Since the growth of mold on cured and smoked meats is favored by the presence of condensed water, avoid excessive humidity. If the relative humidity is higher than recommended, it is essential that good circulation of air be maintained.

Hams and bacon which have been individually wrapped on one or more layers of paper have a tendency to retain upon the surface of the meat any moisture which may have come from the product after wrapping. This moisture, in a measure, stimulates mold and bacterial growth. If hams so wrapped are held at temperatures of 45° F or above for a considerable length of time, mold and slime will form on the surfaces of the meat. Surface slime and mold make the ham unattractive and unpleasant to handle, but do not necessarily indicate spoilage. Accordingly, such products should be carefully inspected to determine how far the mold has penetrated. In most cases,

ITEM	APPROXIMATE KEEPING TIME (MONTHS)
Beef, frozen:	
Boneless, fabricated (w/o ground meat)	10
Boneless, fabricated (w ground meat)	8
Carcass, wholesale cuts	10
Corned	6
Dried, sliced	12
Liver, whole/portion cut	4
Tongue, fresh	4
Bologna:	
Lebanon	8
50 percent beef	3-4
60 percent beef	3-4
75 percent beef	6
Cervelat:	
Dry	6
Soft (thuringer)	3-4
Hams:	
Boneless, cooked	6
Smoked, bone-in	6
Lamb:	
Boneless, fabricated	6
Carcass, wholesale cuts	8
Telescoped	8
Salami:	
Cooked	3-4
Dry	5
Sausage:	
Liver	3-4
New England style	4
Pork, bulk style	3
Veal:	
Carcass, wholesale cuts	1

Figure 3-1. Frozen storage of meat items.

where only the surface is affected, the mold can be removed from the meat with a stiff-bristled brush, wiping with a clean cloth moistened with a vinegar or salt water solution, and allowing the meat to air dry. When the mold growth is heavy it may be trimmed away. If the ham does not have deep cracks or abrasions, the meat underneath the surface is usually perfectly sound and wholesome. When mold growth or spoilage is evidenced deeply between the muscles and around the bone, a survey is usually necessary.

Carcasses and primal cuts. Quarters, carcasses, primal cuts of beef, lamb, and veal are hung or placed on racks when in a chilled condition. If such items are in a solid frozen condition when received, stow compactly as possible in the freezer space. Frozen, boneless beef should be stacked compactly. Veal carcasses or cuts, particularly of the lighter weights and lower grades, are subject to rapid deterioration. Holding time of such items in the chill space should be held to a minimum. Fresh chilled pork cuts should be treated as highly perishable.

Variety meats and sausage. These items are highly perishable and storage time should be held to a minimum.

Exercises (017):

1. Match each keeping time found in column B with its related appropriate frozen meat item, given in column A, by writing each numbered time (column B) beside its corresponding lettered meat item (column A). NOTE: Each item in column B may be used once or more than once.

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Column A *Meat Items*	*Column B* *Keeping Time (Months)*
_____ a. Lamb carcass.	1. 6.
_____ b. Hams boneless, cooked.	2. 8.
_____ c. Beef, corned.	3. 1.
_____ d. Veal carcass.	
_____ e. Lebanon bologna.	

2. List the three factors that affect the keeping time of smoked meat.

3. Give the two solutions that may be used to remove surface mold on hams.

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CHAPTER 4

Processing and Preparing Meats

IN THIS CHAPTER, we will discuss the following:

- Characteristics of meats.
- Bone structure.
- Meat processing.
- Barbecuing meat and poultry.
- Salvaging procedures.

4-1. Characteristics of Meats

Some meat is dark red. Other meat is light pink. Also, the bones of young animals are not the same color as are the bones of older animals. These and other different characteristics indicate more desirable or less desirable quality in the same type of meat. Accordingly we will examine such characteristics in this section.

018. Associate given meat characteristics each with certain meats and name various cuts of pork the commissary procures.

Beef. Beef is the flesh of mature cattle a year or more old. Grain-fed steers under 3 years of age provide the best quality beef. Good beef has bright red flesh, well-marbled tissue, and is finely textured with a covering of firm, white fat. Steers and heifers differ in that a greater percentage of edible meat (fat-to-bone ratio) is contained in steers. A heifer is smaller than the average steer carcass. Steers can be easily recognized by the presence of the pizzle eye (or cap) located above the aitchbone at the rump end. Marbling is the network of fat; thin lines running through the middle of a cut—as distinguished from the rim of fat around the edges of the cut. When you first cut beef, it is a dark, purplish red which turns bright red soon after exposure to air. Less desirable beef has heavier lines of marbling and tends toward yellowish fat on the rim or covering. Bones of older cattle are white and brittle, while in young animals, the bones are soft and red.

Veal. Veal is the meat of milk-fed calves usually under 3 months of age. Good quality veal is characterized by light pink, finely textured flesh, surrounded by firm, white fat, with gleaming white cartilage (the early, soft bone structure which changes to harder bone as the animal grows older). You will find the flesh of older calves redder than that of younger ones. In older calves, the flesh is more like the darker red of mature beef.

Baby beef is 3 to 10 months of age, and is larger in confirmation than pure veal. The flesh of baby beef is more like the darker red of mature beef. Both baby and veal have a high moisture content, and the protective covering of fat is thin.

Lamb. Sheep under 1 year of age is classified as lamb. The flesh of lamb is firm-grained and light pink in color. You will find the bones soft, small and red. Lamb has a plainly visible joint. This is a temporary cartilage which forms a serrated (tooth-like) surface between the shaft of the bone (tibia) and the head of the bone just above the fetlock joint on the foreleg. Older sheep have harder and whiter bones than lamb and no "break joint" is present. They have a "spool joint", that is the regular fetlock joint on the foreleg. The break joint has turned to bone, and the break will no longer occur above the fetlock joint.

Pork. Pork is the flesh of hogs usually under 1 year of age. Good pork has smooth skin, grayish-pink flesh, and is fine-grained and firm-textured, with a covering of firm, white fat. Poorer quality pork is dark pink to red and sometimes has fat with a yellowish tinge or cast, especially in lower grades. The commissary only procures pork in cuts, such as loins, spareribs, hams, boston butts, bacon, shoulders, picnics, and fat back.

Exercises (018):

1. Match each meat type found in column B with its related characteristics, given in column A, by writing each numbered type (column B) beside its corresponding lettered characteristics (column A). NOTE: Each item in column B may be used only once.

	Column A: Characteristics	*Column B: Meat Types*
_____	a. Firm white fat, bright red, fine-textured.	a. Veal
_____	b. Hard white fat; grayish-pink flesh.	2. Pork
_____	c. Light pink, firm-grained flesh; soft, small red bones.	3. Beef
_____	d. Fine-textured, light pink flesh.	4. Lamb

2. In what cuts does the commissary procure pork? Name five out of eight.

4-2. Structure and Primal Cuts of Beef

The structure of an animal includes both bones and flesh. Like all animals, cattle have major bones with which are associated less important bones. In this section, we will consider major bones and their relationship to the two major divisions of a side of beef (hindquarter and forequarter). Let's begin with major bones.

019. Associate groups of associated facts with related major bones.

Major Bones. Figure 4-1 shows a skeletal chart of a side of beef. Observe this chart carefully as we study bone structure. Refer to it often in this discussion. We shall study these major bones: neckbone, backbone, pelvic bone, leg bones, ribs, armbone, and shankbone.

Neckbone. At the bottom left of figure 4-1, note the neckbone. This bone consists of vertebrae (jointed bones) which support the animals' neck.

Backbone. Above the neckbone (fig. 4-1) you see the backbone, extending from neck to tailbone. The backbone is similar to the human spine. Notice these bones associated with the backbone: the blade bone, which you use as one guide in processing chuck; and the chine bone, used as a measuring point in some beef processing. Although shown here as a single point, the chine bone is actually a ridge or crest along the backbone. Notice that the backbone supports the upper end of the ribs.

Pelvic bone. This very important bone, which corresponds to the human pelvis, contains both the aitch (or rump) bone and the hipbone. The aitch bone is so called because it resembles a rough capital letter H.

Leg bones. Strictly speaking, the leg bone refers to the round bone of the hindquarters, but we also find a shankbone attached by a joint to the round (leg) bone. Note the stifle joint between the round bone and the shankbone.

Ribs. Cattle have 13 ribs, attached to the backbone at one end (left side, fig. 4-1) and to the breastbone at the other end. A beef forequarter contains all but the last (13th) rib. You will use ribs to determine where to make key forequarter cuts.

Arm and foreshank bones. The armbone (lower center, fig. 4-1), actually part of the animal's front leg, is surrounded by meat which makes fine arm roasts. Use the armbone as a guide when separating the arm and shank from the chuck area of the forequarter. The foreshank bone is the lower part of the animal's front leg.

Exercises (019):

1. Match selected associated facts, found in column B, with major bones, given in column A, by writing each numbered group of facts (column B) beside its corresponding major bone group (column A). NOTE: Each item in column B may be used only once.

Column A *Major Bones*	*Column B:* *Associated Facts*
_____ a. Arm and foreshank	1. Include round bone, stifle joint, and shank.
_____ b. Pelvic bone	2. Attached to backbone at at one end.
_____ c. Neckbone	3. Parts of foreleg.
_____ d. Leg bones (including hindshank)	4. Supports neck.
_____ e. Backbone	5. Consists of aitch bone and hipbone.
_____ f. Ribs	6. Includes blade bone and chine bone.

020. Associate significant retail cuts with their appropriate related primal cuts of beef.

Hindquarter Primal Cuts. Carefully study figure 4-2, beef hindquarter chart, as you relate hindquarter bone structure to standard cutting lines (primal cuts) and invididual cuts. A hindquarter—which consists of the last (13th) rib, part of the backbone, the pelvic and leg bones (including the hindshank)—contains seven cutting areas. Let's study the details of each primal cut.

Shank. The shank (area 1 at the top of fig. 4-2) provides ground beef and stew beef. The shank is the lower end of the animal's hind leg.

Heel of round. The heel of round (area 2) includes the stifle joint, which joins the leg (round) bone to the shankbone. It provides ground beef, stew beef, and roast. Note the dotted line next to the bone. You have to cut along this dotted line in processing the heel of round area.

Round. The round (area 3, fig. 4-2) is one of the choice beef areas. It includes the round (leg) bone and yields swiss steak (a) and round steak (b). Round steak is a favorite with customers.

Sirloin tip. Also called knuckle, area 4, is directly opposite the round and contains such individual cuts as roast and steak. Sirloin tip provides excellent tip roast, a choice bit of meat.

Rump. The rump (area 5) includes the aitch bone and tail bone. Process the rump into roasts.

Loin. One of the most choice beef areas, the loin (area 6) provides sirloin steak, porterhouse steak, T-bone steak and top loin steak.

Flank. The flank (area 7) yields not only flank steak but also ground beef and beef stew. Note that the only bone in the flank area is a part of the 13th rib. The steak is removed from area shown within the dotted line.

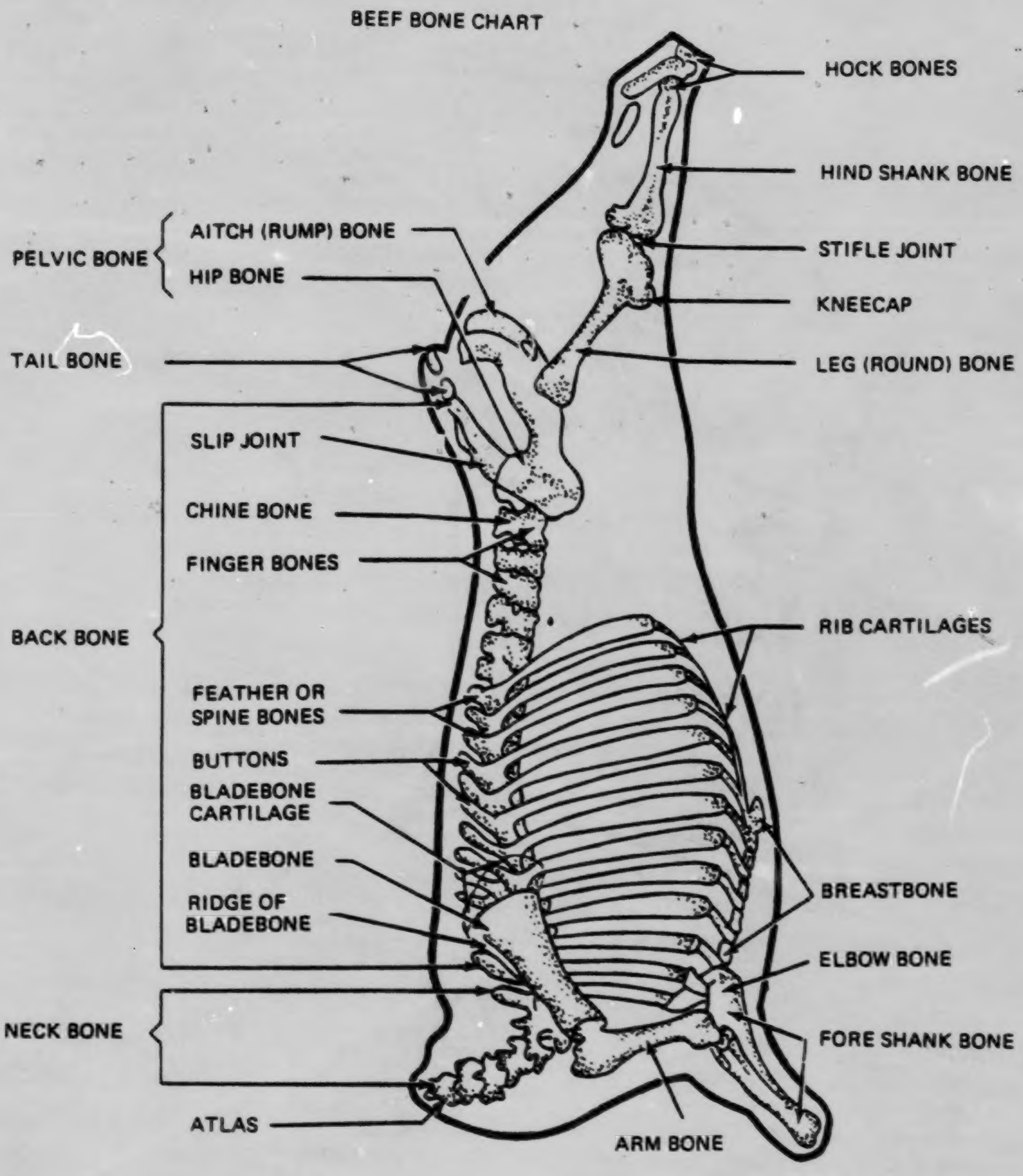
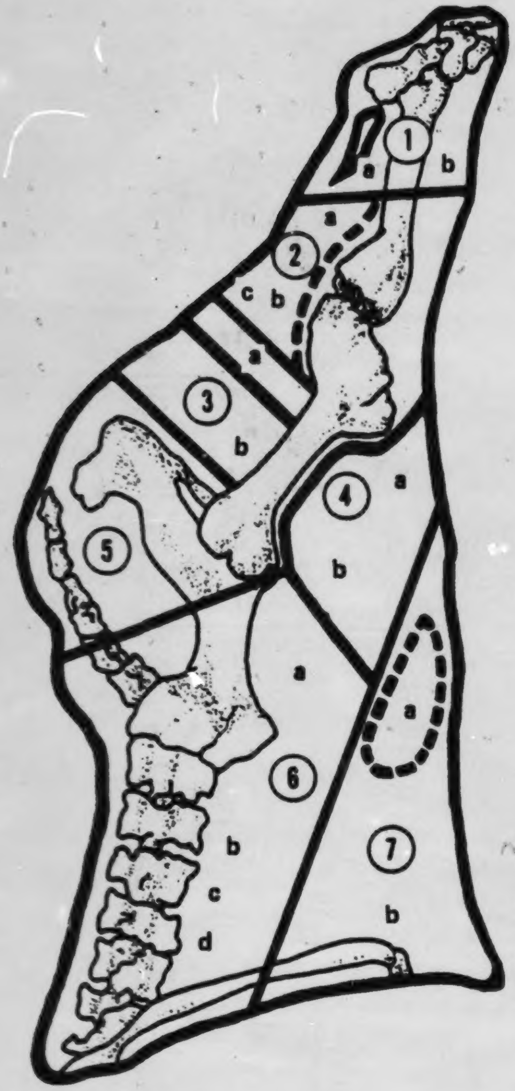

BEEF BONE CHART
HOCK BONES
HIND SHANK BONE
PELVIC BONE
AITCH (RUMP) BONE
HIP BONE
STIFLE JOINT
KNEECAP
TAIL BONE
LEG (ROUND) BONE
SLIP JOINT
CHINE BONE
FINGER BONES
BACK BONE
RIB CARTILAGES
FEATHER OR SPINE BONES
BUTTONS
BLADEBONE CARTILAGE
BLADEBONE
BREASTBONE
RIDGE OF BLADEBONE
ELBOW BONE
NECK BONE
FORE SHANK BONE
ATLAS
ARM BONE

Figure 4-1. Skeletal side of beef.



1. **Shank**
   - a. **Ground beef**
   - b. **Stew beef**

2. **Heel of round**
   - a. **Ground beef**
   - b. **Stew beef**
   - c. **Roast**

3. **Round**
   - a. **Swiss steak**
   - b. **Round steak**

4. **Sirloin tip (knuckles)**
   - a. **Roast**
   - b. **Steak or roast**

5. **Rump, boned and rolled**

6. **Loin**
   - a. **Sirloin steak**
   - b. **Pin bone steak**
   - c. **Porterhouse steak**
   - d. **T-bone steak**
   - e. **Top loin steak**

7. **Flank**
   - a. **Steak**
   - b. **Ground beef**

Figure 4-2. Hindquarter chart showing cutting lines of standard cuts.

Forequarter Primal Cuts. Look carefully at figure 4-3. The forequarter includes the neck, blade bone, part of the backbone, the first 12 ribs, and the shankbone. Let's examine each of these primal cuts.

Shank. The shank (area 1) includes the foreshank bone and a small portion of the armbone. From the shank you get ground beef, beef stew, and soup meat with bone.

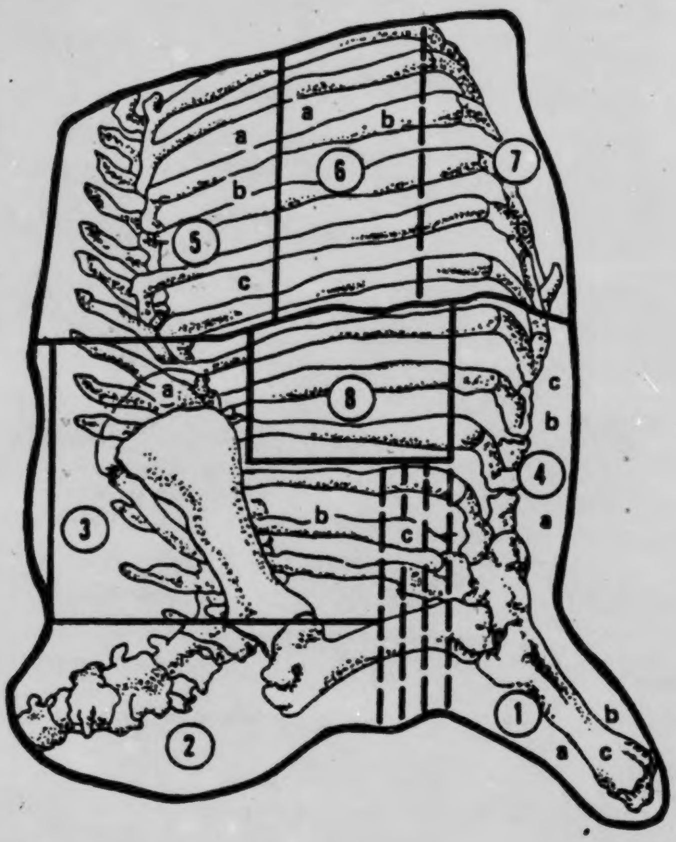
Neck. The neck (area 2) is processed into ground beef, stew, boneless roasts, and bones can be processed and sold as neck bones.

Chuck (area 3). This large area is one of the more desirable parts of the forequarter. You first separate the chuck from the rib and plate section, and then the two sections are processed into retail cuts from the various areas listed.

Area 3a. This area is processed into blade bone pot roasts or steaks. It includes part of the backbone and most of the bladebone. Bladebone roasts and steaks are recognized by the long flat (blade) bone running through them.

Area 3b. Area 3b has a portion of the armbone and bladebone and the first six ribs. T-bone pot roasts/steaks or boneless pot roasts/steaks.

Area 3c. The round bone and lower rib bones are included in this area. Area 3c yields round bone roasts or steaks.



1. **Shank**
    - a. **Ground beef**
    - b. **Stew beef**
    - c. **Soup meat w/bone**
2. **Neck—boneless roast, stew beef or ground beef**
3. **Chuck**
    - a. **Blade bone pot roast or steak**
    - b. **7-bone pot roast or steak**
    - c. **Round bone pot roast (arm) or steak**
    - d. **Boneless pot roast (a, b, or c)**
4. **Brisket**
    - a. **Stew beef**
    - b. **Ground beef**
    - c. **Boneless pot roast**
5. **Rib**
    - a. **Rib steak**
    - b. **Rib eye steak**
    - c. **Roast**
6. **Plate**
    - a. **Short ribs**
    - b. **Ground beef**
7. **Short plate, ground beef**
8. **3-rib corner**

Figure 4-3. Beef forequarter chart showing cutting lines and location of standard cuts.

Area 4. The brisket yields ground beef, stew beef, and boneless pot roast.

Area 5. The rib includes the upper part of ribs 7 through 12 and a portion of the backbone. From this area you receive rib steak, rib eye steak, and rib roasts.

Area 6. The plate area consists of the center rib bones of 7 through 12. It yields short ribs and ground beef.

Area 7. The shortplate consists of the lower part of rib bones 7 through 12 and yields ground beef.

Area 8. The 3-rib corner yields boneless pot roasts, stew, and ground beef. Rib bones 4 through 6 are located in this area.

Exercises (020):

1. Match each individual cut found in column B with its related appropriate standard hindquarter primal cut, given in column A, by writing each numbered individual cut (column B) beside its corresponding lettered primal cut (column A). NOTE: The individual cuts in column B may relate to more than one primal cut.

Column A: Primal Cuts	*Column B: Individual Cuts*
______ a. Shank	1. Boned and rolled roast.
______ b. Heel of round	2. Flank steak.
______ c. Round	3. Beef stew.
______ d. Sirloin tip	4. Ground beef.
______ e. Rump	5. T-bone steak, top loin steak.
______ f. Loin	6. Swiss steak.
______ g. Flank	7. Roasts and steaks (opposite round area).

2. Match each individual cut found in column B with its related appropriate standard forequarter primal cut, given in column A, by writing each numbered individual cut (column B) beside its corresponding lettered primal cut (column A). NOTE: The individual cuts in column B may relate to more than one primal cut.

Column A: Primal Cuts	*Column B: Individual Cuts*
______ a. Chuck	1. Ground beef.
______ b. Plate	2. Beef stew.
______ c. Shank	3. Boneless pot roast.
______ d. Short plate	4. Steak.
______ e. Brisket	5. Blade bone pot roast.
______ f. Neck	6. Short ribs.
______ g. Rib	7. Round bone pot roast.
	8. Soup meat with bone.

4-3. Beef Processing

You are now ready to study the processing of beef. We will discuss preliminary hindquarter breaking procedures and the final processing of retail cuts of the hindquarter. Then we will cover forequarter breaking and further processing procedures. We will also discuss fabricated subprimal cuts of beef. Let's begin this discussion with hindquarter processing.

021. Differentiate between correct and incorrect given statements reflecting preliminary hindquarter breaking procedures, correcting the latter.

Hindquarter Breaking Procedures. Refer to figure 4-4 through 4-13 as we discuss the breaking procedures for the hindquarter.

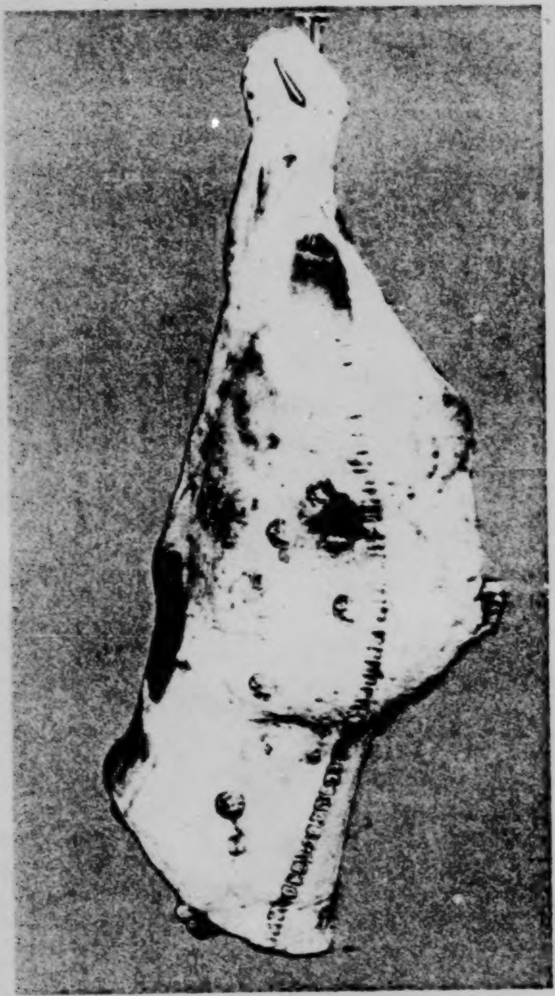


Figure 4-4. Hanging hindquarter.

Figure 4-4. The hindquarter is hung, as illustrated, with the meathook extending all of the way through the gambrel cord.

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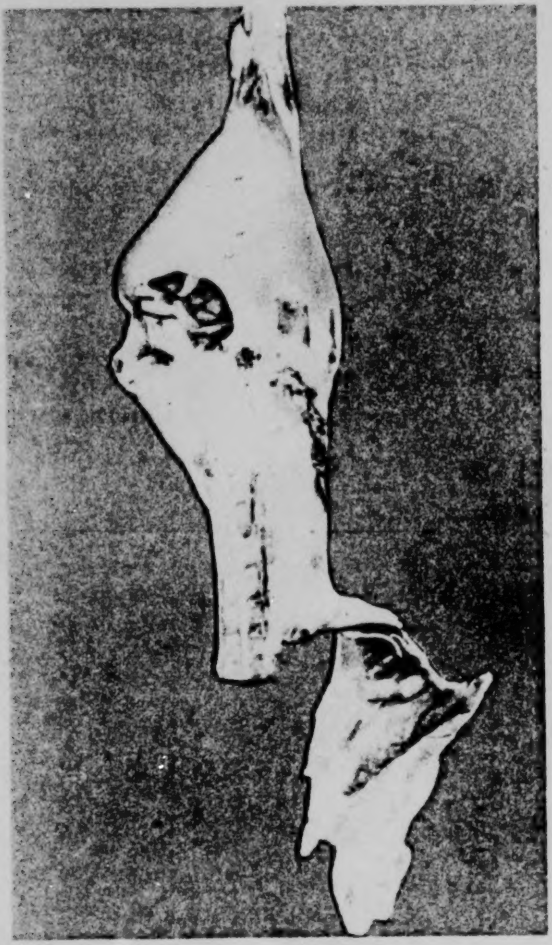

Figure 4-5. Removing flank.

Figure 4-5. Remove the spinal cord and all dry, dark, or discolored portions of the hindquarter.

a. Remove the kidney and all excess fat, but leaving an ample covering of fat over tenderloin.

b. Measure 3 inches from the eye on the loin end and mark.

c. Locate the natural seam and follow the contour of the round, cutting in a straight line to the 3 inch mark.

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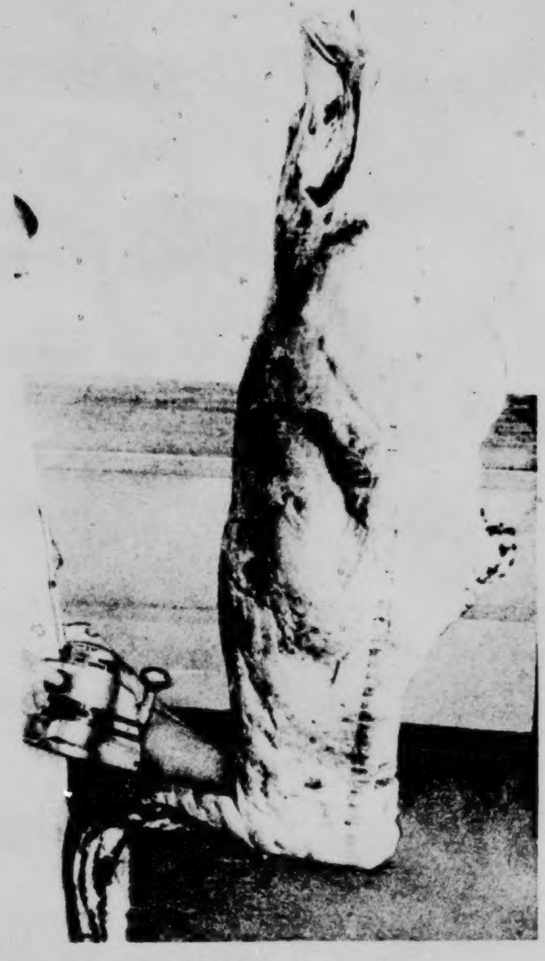

Figure 4-6. Sawing through 13th rib.

Figure 4-6. Saw through the 13th rib to complete removal of the flank.

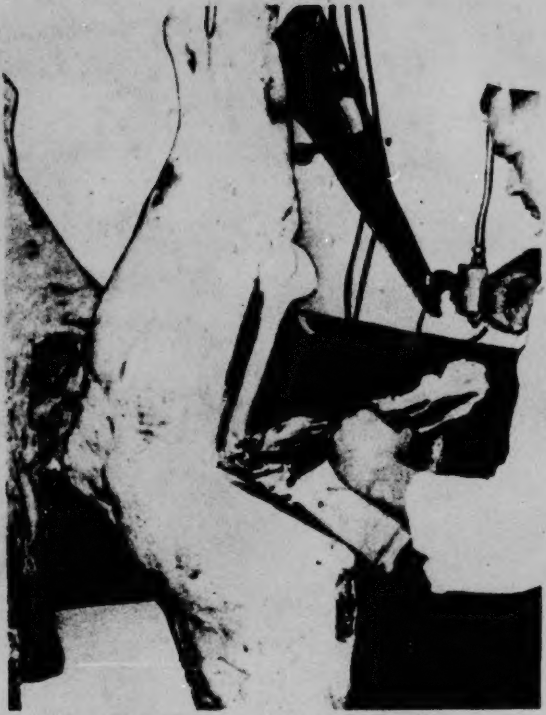

Figure 4-7. Removing sirloin tip.

Figure 4-7. Next, remove the sirloin tip.

a. Loosen the kneecap that covers the stifle joint.

b. On the top round side, cut from the kneecap (the length of the legbone) down to the aitchbone to expose the center of the legbone.

c. On the bottom round side, cut from the kneecap (the length of the legbone) down to the aitchbone to expose the center of the legbone.

d. Insert your meathook through the fatty tissue of the kneecap, cut the membrane holding the meat to the bone, and pull the sirloin tip down to aitchbone.

e. Turn the knife at the rump knuckle and draw out 1 inch above the gland on the flank side, leaving the gland on the tip.

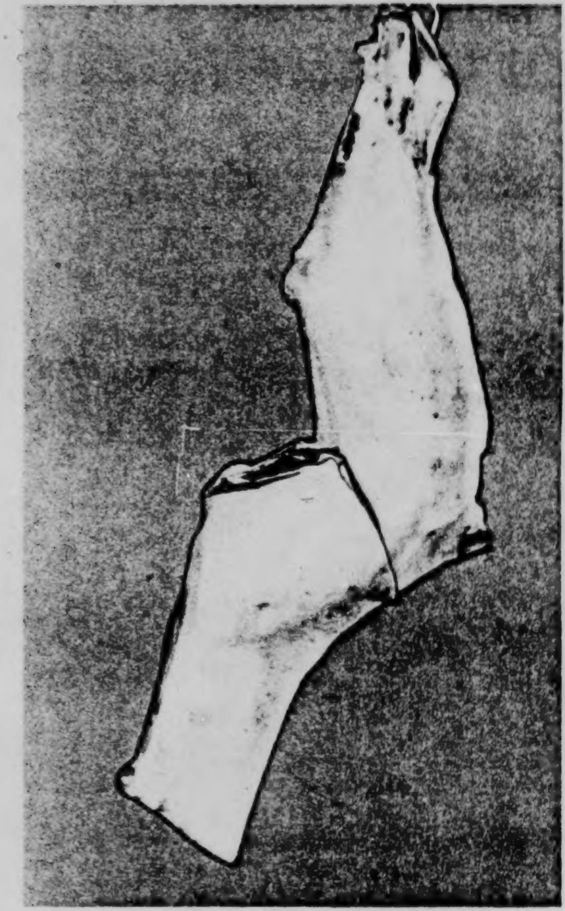

Figure 4-8. Marking angle for removing full loin.

Figure 4-8. Mark the cutting line for separating the full loin from the round area.

a. Establish the correct angle by using the fifth sacral vertebra and the rump knucklebone as pivot points.

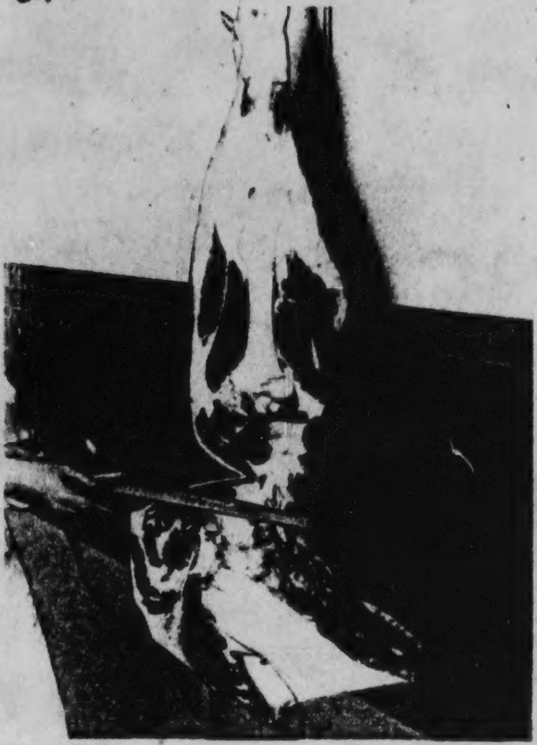

Figure 4-9. Separating full loin from round.

Figure 4-9. Complete the separation by sawing through the bones. Cutting at this angle will result in less bone in pinbone steaks.

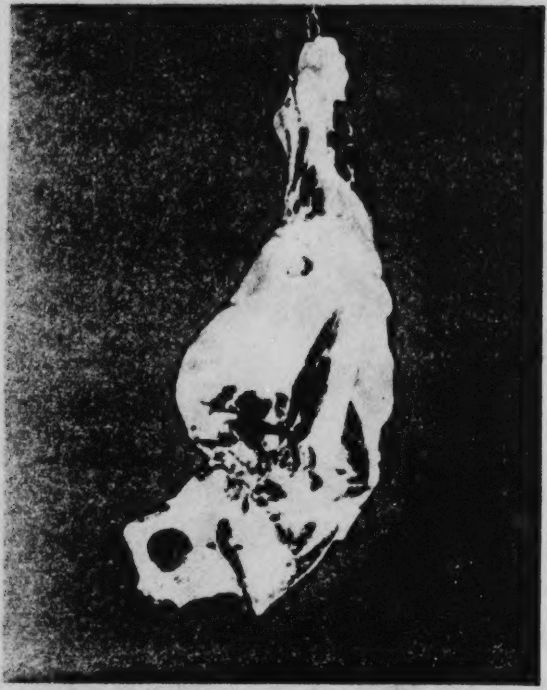

Figure 4-10. Removing aitch bone from round.

Figure 4-10. Remove the aitch (rump) bone from the round.

a. Mark a line on the round side one inch from aitchbone, using the top points of the aitchbone as guides.

b. Remove the tailbone and trim.

c. Remove the meat from the exposed cavity of the aitchbone.

d. Remove the aitchbone by following the curvature of the bone.

e. Use trimmings for ground beef.

f. At this time the round may be left as is for processing bone-in steaks, or further boned for boneless retail cuts.

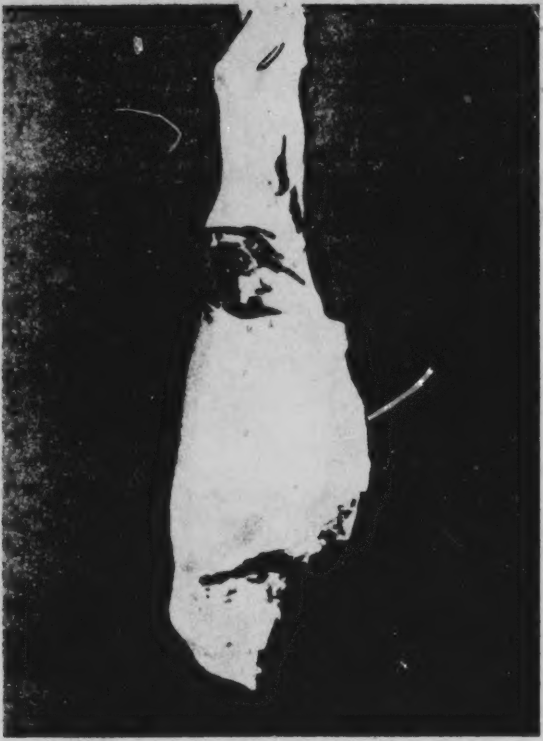

Figure 4-11. Boning round from hind shank.

Figure 4-11. Separate the round from the hindshank by cutting below the gambrel cord to the natural seam.

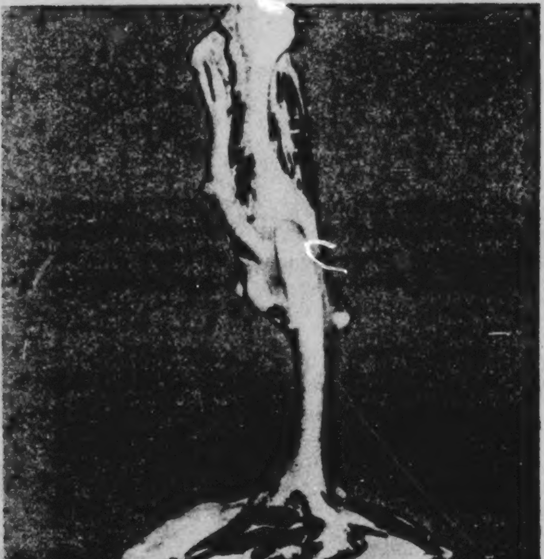

Figure 4-12. Boning round from legbone.

Figure 4-12. Bone the round from the legbone.

a. Follow the natural seam to the legbone.

b. Continue cutting around the legbone down to the ball portion of the legbone. The weight of the round will assist in the separation of the legbone and round.

c. Release the round by cutting around the end of the legbone.

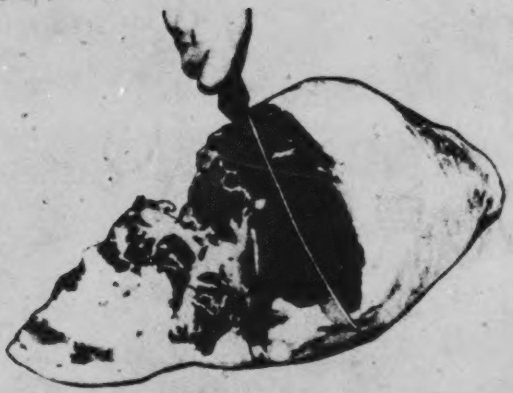

Figure 4-13. Separating rump from round.

Figure 4-13. Using the previous landmarks as guides, separate the rump from the round.

Exercises (021):

1. Distinguish between correct or incorrect statements that follow by placing a T or F in the blanks provided and changing the incorrect statements to correct ones.

____ a. To hang the hindquarter, extend the meathook all of the way through the gambrel cord.

____ b. Before removing the flank, remove the kidney and all fat covering the tenderloin.

____ c. When removing the sirloin tip, leave the gland on the full loin.

____ d. Remove the full loin from the round by sawing through the rump knucklebone and the fifth sacral vertebra.

____ e. Separate the round from the hindshank by cutting above the gambrel cord to the natural seam.

2. What are the two steps involving measurement and seam location preceding the sawing through of the 13th rib to complete removal of the flank?

3. In establishing the correct angle for the cutting line separating the full loin from the round area what are the pivotal points?

022. Provide missing information in incomplete statements pertaining to the final processing of primal cuts from the hindquarter and resequence correctly the steps in separating top round from bottom round and processing both.

Flank. Refer to figures 4-14, 4-15, and 4-16 in removing the flank steak and processing it into steak.

Figure 4-14. Removing flank steak.

Figure 4-14. To remove the flank steak from the flank section, proceed as follows.

a. Cut a thin strip from the navel side to untie the heavy membrane.

b. Remove the membrane by pulling from the thick end to the opposite end.

c. Locate the natural seam under the flank steak.

d. Release on the thick end and pull the flank steak as far as it will pull easily; then cut off the flank steak.

e. Use the remaining portion of the flank for stew beef and ground beef.

Figure 4-15. Flank steak.

Figure 4-15. The flank steak is lean, oval shaped, and free of serious membrane or white fibrous tissue, with the grain running lengthwise.

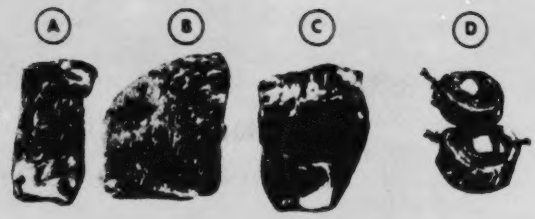

Figure 4-16. Merchandising the flank steak.

Figure 4-16. The flank steak may now be merchandised in any one of the following ways:

a. Shorten the muscle fibers by scoring the steak with a knife, making crisscross cuts about 3/4 of an inch apart.

b. Tenderize the steak, using the tenderizing machine.

c. Prepare the flank steak with a pocket by opening the thick end of the steak crosswise toward each side (forming an opening but not cutting through the side). Insert the knife in the opening and cut a pocket on the inside of the steak.

d. Prepare fillet of flank by rolling the steak around a piece of fat. Insert toothpicks or meat skewers, and cut it up into individual steaks.

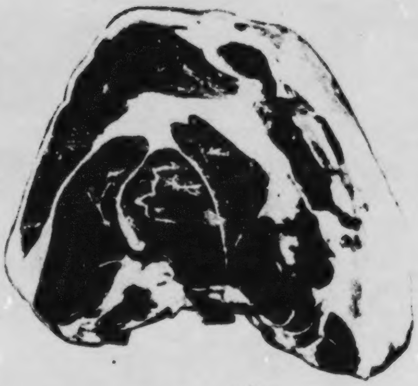

Figure 4-17. Sirloin tip with covering on.

Sirloin Tip. Refer to figures 4-17 and 4-18 in processing the sirloin tip.

Figure 4-17. In the following steps the sirloin tip is processed with the cover on.

a. Remove the kneecap by cutting parallel with the face of the sirloin tip.

b. Remove any excess fat.

c. Cut the tip into steaks or roasts.

d. Using any trimmings for stew beef or ground beef.

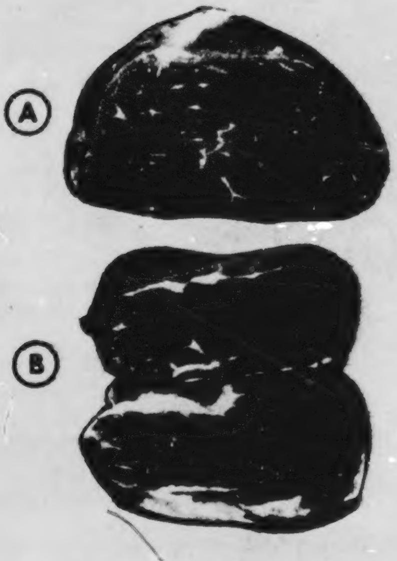

Figure 4-18. Merchandising sirloin tip with covering on.

Figure 4-18. The sirloin tip may also be processed, removing the cover. To remove the cover, follow the natural seam around the sirloin tip. The tip is then merchandised as follows:

a. Cut the sirloin tip into roasts of varied weights. Thin, wide slices of cod fat can be placed around roasts and tied for a more desirable finished product.

b. Cut the sirloin tip in varied thickness for steaks.

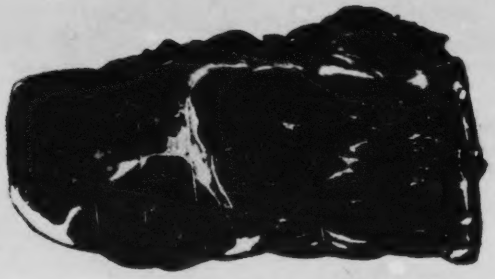

Figure 4-19. Rolled rump roast.

Rump Roast. The finished rolled roast is shown in figure 4-19. Use the following steps in preparing rump roast.

a. Form the boneless rump into a roll.

b. Tie the roll crosswise with roast cord, approximately 1 inch apart, or use netting.

c. Merchandise the roll whole or cut into varied weights.

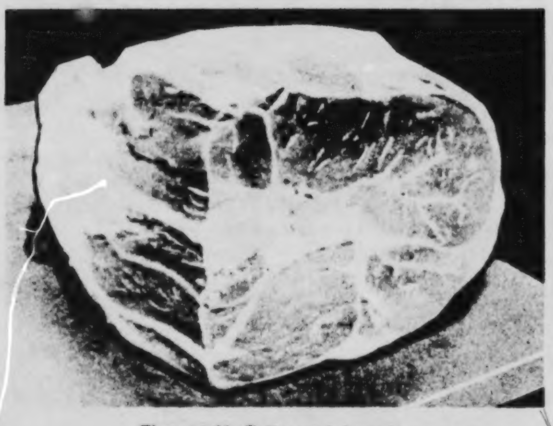

Figure 4-20. Full round, bone-in.

Bone-In Round. To process bone-in round steaks, refer to figures 4-20, 4-21, and 4-22. Figure 4-20 shows the full bone-in round before processing.

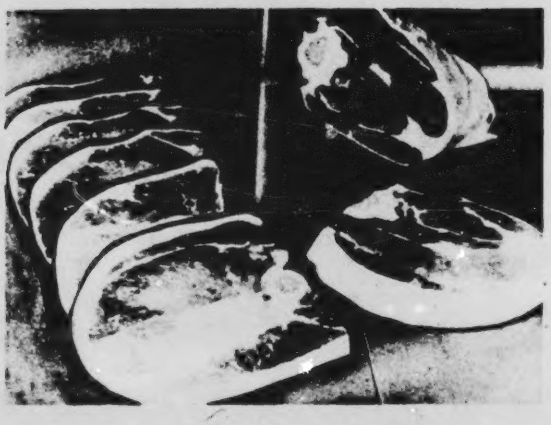

Figure 4-21. Processing bone-in round steaks.

Figure 4-21. To process bone-in round steaks, proceed as follows:

a. Slice the round steaks down through the gland.

b. Slice it into one 2 inch swiss steak.

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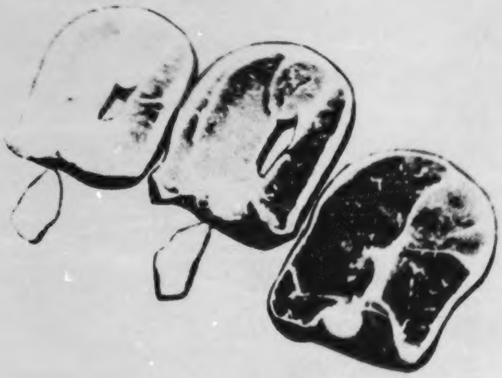

Figure 4-22. Trimming bone-in round steaks.

Figure 4-22. Remove excess fat and the gland from round steaks before merchandising.

Full Boneless Round Cuts. Refer to figure 4-23 for processing full boneless round cuts.

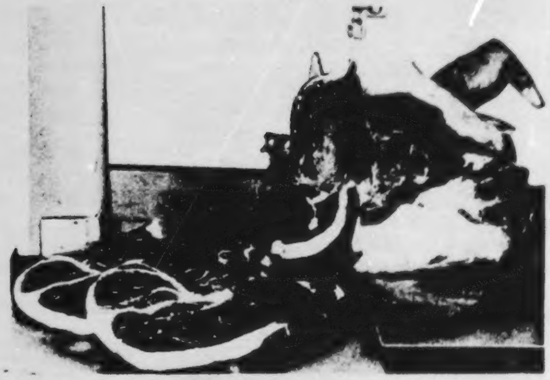

Figure 4-23. Processing full boneless round steaks.

Figure 4-23. To process full round boneless cuts, proceed as follows:

a. Slice the steaks 1/2 inch thick until the heavy deposit of fat in the center of the round is reached.

b. Trim this excess fat and any discoloration from steaks before merchandising.

c. The remainder of round can be merchandised as roast, steak, and stew beef.

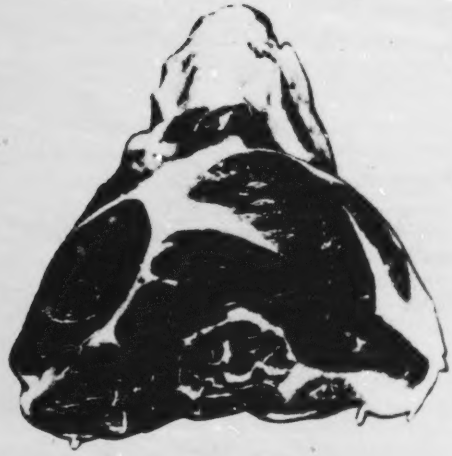

Figure 4-24. Heel of round.

Heel of Round. The heel (fig. 4-24) is the back portion of the round that includes a portion of the shank meat. The heel is merchandised as pot roast, stew beef or ground beef.

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Processing the Individual Muscles of the Round. To separate the round and process individual cuts, refer to figure 4-25 through 4-28.

Figure 4-25. To separate the top round from bottom round, proceed as follows:

a. Separate the top (inside) round from the bottom (outside) round by following the natural seams.

b. Leave the eye of round attached to the bottom round.

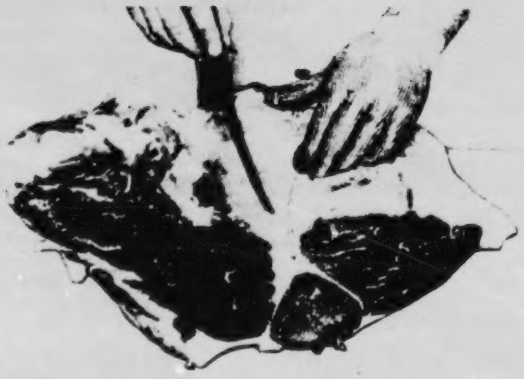


Figure 4-25. Separating top round from bottom round.

Figure 4-26. In processing the top round, proceed as follows:

a. Remove any discoloration and excess fat found on the outside.

b. Merchandise the round as steak or roast.

c. Cut these steaks 1/2 inch thick.

d. Cut the roasts lengthwise (with the grain of the meat) to give a uniform crossgrain carving when they are cooked.

e. The back portion can be used for stew beef or ground beef.

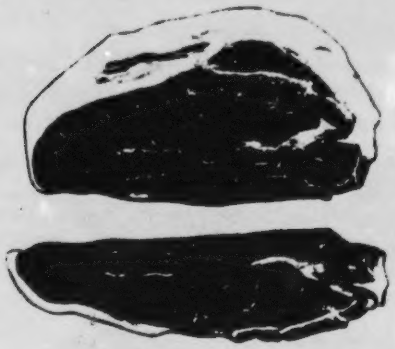


Figure 4-26. Top (inside) round.

Figure 4-27. To process the full bottom (eye of round and bottom round as one unit) round, do the following:

a. Remove the popliteal lymph gland.

b. Remove the silver strip located at the seam where the sirloin tip was separated from the bottom round.

c. Cut these steaks 1/2 inch thick.

d. Cut the roasts into various sizes.

e. Trimmings are used for stew beef or ground beef.

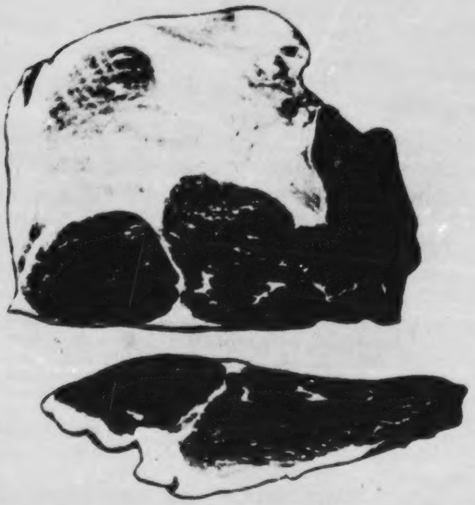


Figure 4-27. Full bottom (outside) round with eye attached.

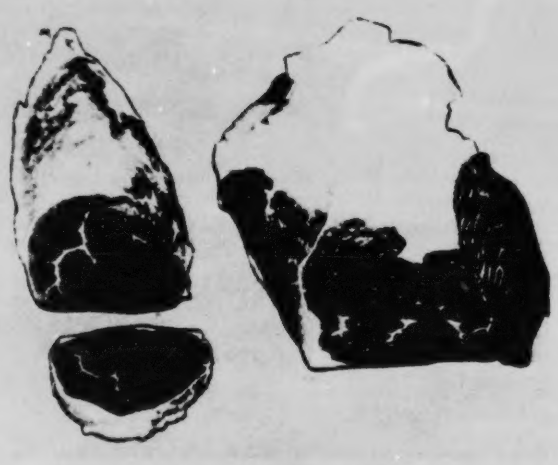


Figure 4-28. Eye and bottom (outside) round.

Figure 4-28. To process eye of round and bottom round cuts, proceed as follows:

a. Separate the eye of round from the bottom round by following the natural seam.

b. Remove any excess fat and the lymph gland from the bottom round.

c. Remove the silver strip from the bottom round.

d. Cut the eye of round into steaks 1/2 inch thick, or leave it whole or cut it into roasts of various sizes.

e. Process the bottom round in the same way as the eye is processed.

f. Use any trimmings for stew beef or ground beef.

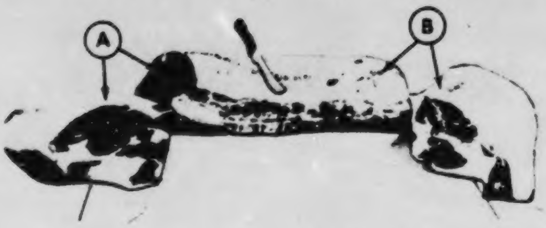


Figure 4-29. Trimmed ioin of beef.

Full Loin. The full loin (fig. 4-29) consists of two wholesale cuts, the sirloin (a) and the short loin (b). To separate the sirloin (a) from the short loin (b), locate the end of the hipbone (pinbone) and cut parallel with the face of the sirloin end. To process the sirloin and short loin, refer to figures 4-30 through 4-35.

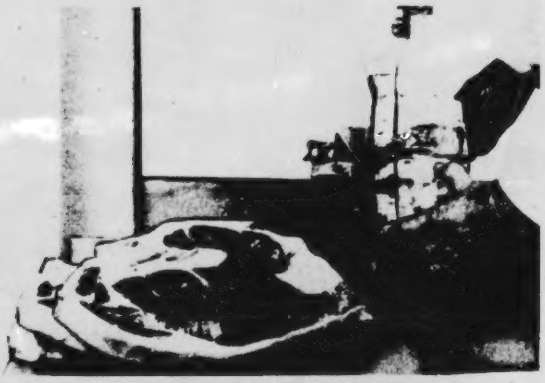


Figure 4-30. Processing sirloin.

Figure 4-30. The sirloin may be boned and the steaks merchandised as boneless top sirloin steaks and to process bone in sirloin as follows:

a. Cut these steaks of uniform thickness by keeping the sirloin pressed against the guide.

b. Cut these steaks 3/4 to 1½ inches thick (according to customer demand).

c. Trim all individual steaks of excess fat and bone.

d. Remove any bone dust before merchandising.

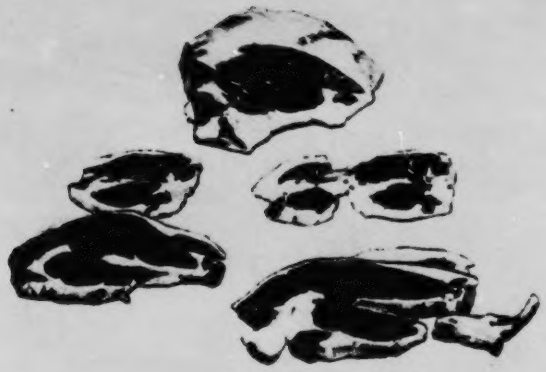


Figure 4-31. Sirloin and pin bone steaks, trimmed and untrimmed.

Figure 4-31. Notice the whole sirloin (top center); pinbone steak, trimmed and untrimmed (center); and sirloin steak trimmed and untrimmed (bottom).

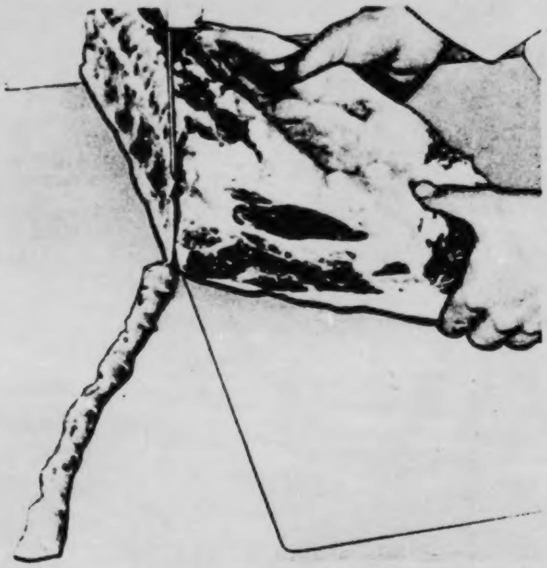


Figure 4-32. Trimming short loin.

Figure 4-32. To trim the short loin, do the following:

a. Remove the excess chine bone.

b. Trim the backbone to remove any discoloration and sharp bones.

c. Remove any excess flank meat and remove any tails that exceed 1 inch before cutting into steaks.

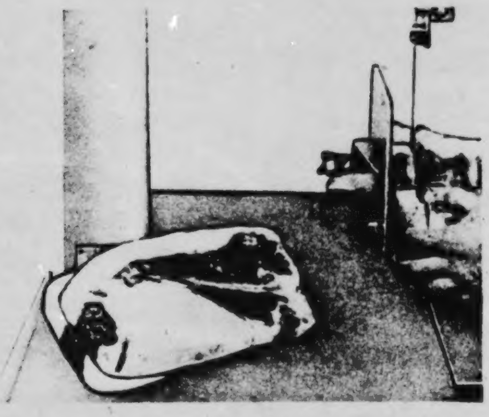


Figure 4-33. Processing short loin.

Figure 4-33. To process the short loin, proceed as follows:

a. Cut steaks of uniform thickness by keeping the short loin pressed against the guide.

b. Cut porterhouse and T-bone steaks 1/2 to 1½ inches thick and top sirloin steaks 3/4 of an inch thick. However, the actual thickness of the steaks depends upon customer demand.

c. Remove any bone dust.

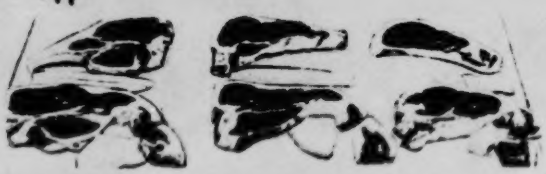
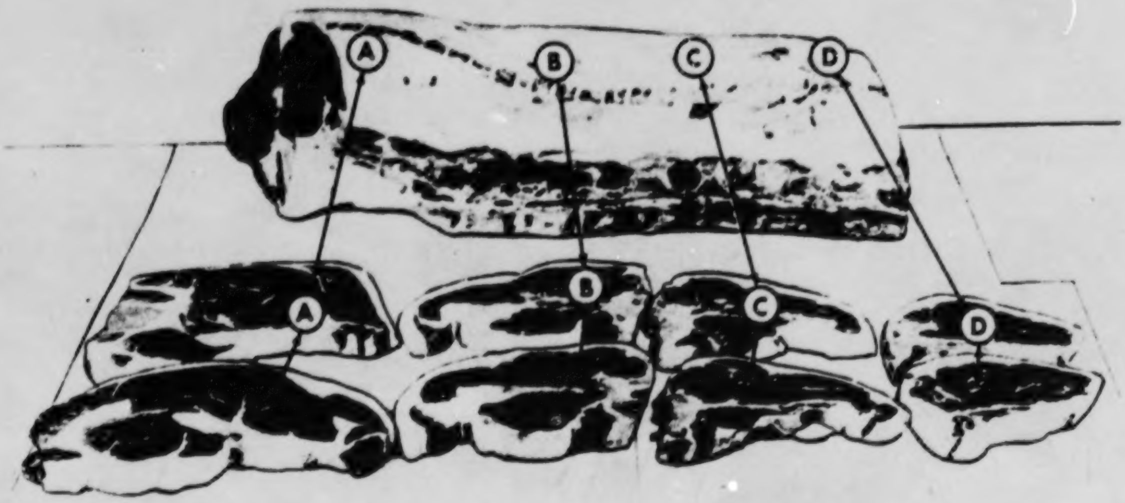


Figure 4-34. Steaks cut from short loin.

Figure 4-34. Figure 4-34 shows porterhouse steaks, trimmed and untrimmed (left); T-bone steaks, trimmed and untrimmed (center); and top loin steaks, trimmed and untrimmed (right).



The upper cut is the trimmed loin of beef, showing location of steaks:

- **A. Sirloin**
- **B. Porterhouse**
- **C. T-bone**
- **D. Top loin**

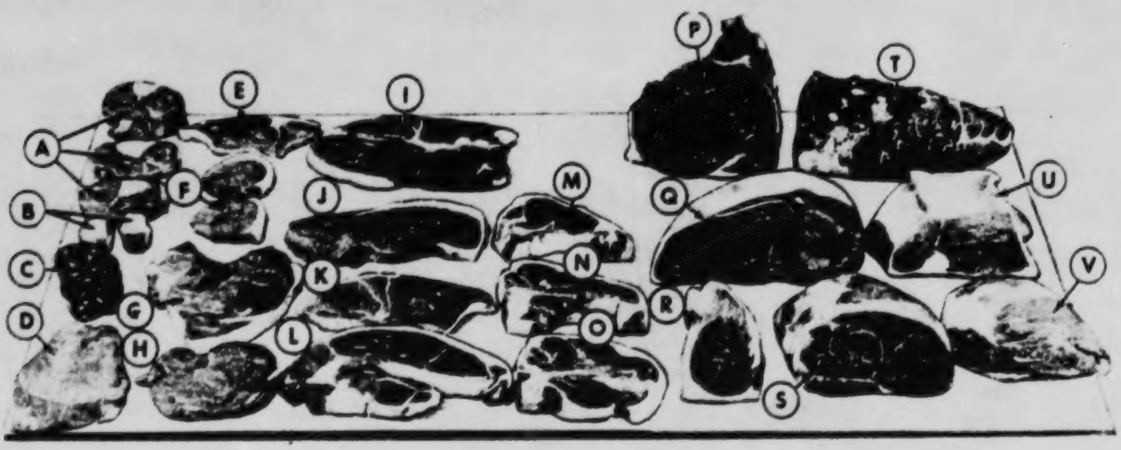
The lower cuts are steaks cut from loin of beef:

- **A. Sirloin, cut from large end of loin.**
- **B. Porterhouse, cut from large end of short loin. A large tenderloin is characteristic of porterhouse steaks.**
- **C. T-bone, cut after porterhouse has been removed down to point where tenderloin becomes thin. A smaller tenderloin is characteristic of T-bone steaks.**
- **D. Top loin steak, the remaining portion of short loin. Top loin steaks are characterized by very little or no tenderloin.**

Figure 4-35. Trimmed loin and steaks.

Figure 4-35. Notice the full loin, the individual cuts derived from it, and their location.

Cuts Received From Hindquarters. Figure 4-36 shows and lists the standard retail cuts received from the hindquarter.



A. Hind shank meat, bone-in
B. Soupbones
C. Kidney
D. Flank steak
E. Bottom (outside) round steak, eye removed
F. Eye of round steak
G. Sirloin tip (knuckle) steak, covering on
H. Sirloin tip (knuckle) steak, covering off
I. Full round steak
J. Top (inside) round steak
K. Bottom (outside) round steak, eye of round included
L. Sirloin steak
M. Club steak
N. T-bone steak
O. Porterhouse steak
P. Sirloin tip, covering on
Q. Top (inside) round
R. Eye of round
S. Sirloin tip, covering removed
T. Rump roast, boneless
U. Bottom (outside) round, eye still attached
V. Heel of round

Figure 4-36. Cuts from beef hindquarter.

Exercises (022):
Complete exercises 1 through 8 by filling in the blanks with the appropriate word or words.

1. ____________ steak has grain running lengthwise.
2. The ____________ ____________ may be merchandised with the outside covering intact or removed.
3. The retail cut that has a gland in the center is ____________ ____________ .
4. The cut of beef that has shank meat attached is the ____________ ____________ ____________ .
5. The silver strip separates the ____________ from the ____________ ____________ .
6. To separate the sirloin from the full loin, cut parallel with the face of the sirloin end to the ____________ .
7. A large tenderloin is characteristic of a ____________ steak.
8. The last steak processed from the shortloin is ____________ ____________ .
9. The following are steps in separating top round from bottom round and processing both correctly. Resequence their order after first separating them into (a) top (inside) and (b) bottom (outside) round.
   a. Cut the steaks 1/2 inch thick.
   b. Follow the natural seams in separating the top round from the bottom round.
   c. Use the back portion for stew beef or ground beef.
   d. Remove any discoloration and excess fat from the outside.
   e. Leave the eye of round attached to the bottom round.
   f. Cut the roasts lengthwise (with the grain of the meat) to give a uniform crossgrain carving when they are cooked.
   g. Merchandise the round as steak or roast.

023. Discriminate between correct and incorrect statements about preliminary breaking procedures of the forequarter and final rib processing, invalid, correcting the latter, and identify acceptable ways to merchandise the short plate from a mixed list of acceptable and unacceptable such ways.

Preliminary Forequarter Breaking. Refer to figures 4-37, 4-38, and 4-39 for preliminary breaking procedures.

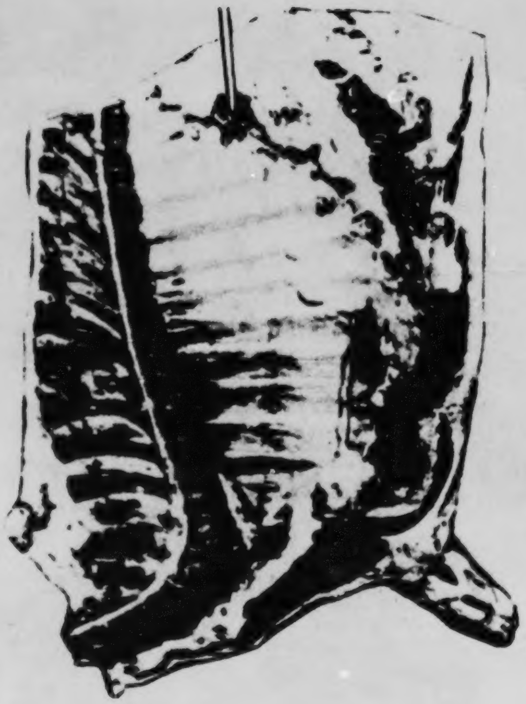


Figure 4-37. Breaking forequarter.

Figure 4-37. While the forequarter is hanging on the rail, proceed as follows:

a. Remove the spinal cord.

b. Trim off any dark exposed surface, especially in the neck area. Do not use this for ground beef.

c. Remove any meat in the cavity of the chine bone, trim, and use it for ground beef.

d. Remove the skirt meat from the inside of the forequarter on the plate section by cutting a thin strip from the thin edge to untie the membrane; pulling the membrane from the inside and the outside of the skirt; and cutting under the skirt, staying close to the rib bones and over the rib cartilages.

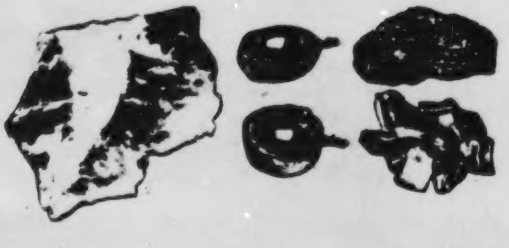


Figure 4-38. Merchandising the shirt meat.

Figure 4-38. To prepare for merchandising, remove any excess fat from the meat. The skirt may be merchandised in any one of the following ways:

a. As skirt steak (fillet of steak, center of fig. 4-38). To prepare the skirt steak, cut a strip of cod fat approximately 1/2 inch square; place the strip of fat crosswise on the skirt meat and roll it lengthwise, so that the fat will be in the center; insert toothpicks to hold the roll together and slice between the toothpicks to make individual cuts.

b. As ground beef (top right in fig. 4-38).

c. Beef stew (bottom right in fig. 4-38).

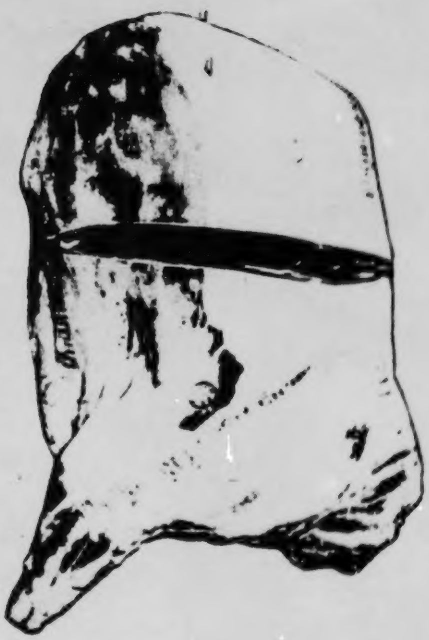


Figure 4-39. Separating wing section from cross-cut chuck.

Figure 4-39. Count five ribs from the neck and pierce between the fifth and sixth ribs, then proceed as follows:

a. Cut between the fifth and sixth ribs, parallel with the rib bones.

b. Saw through the breastbone and the backbone to separate the wing section from the crosscut section.

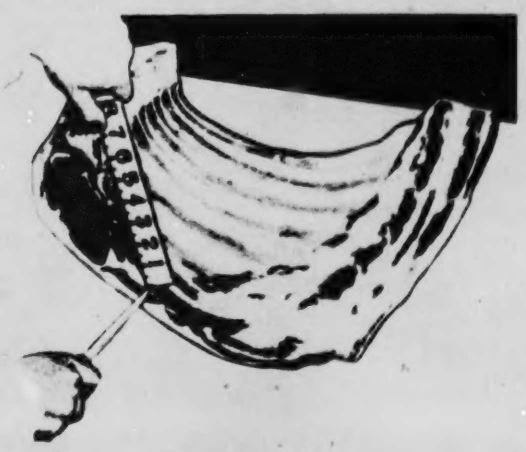


Figure 4-40. Marking plate.

Processing the Rib (Wint Section). Figures 4-39 through 4-50 show processing of the wing section.

Figure 4-40. Measure 7 inches from the chine bone on the small end and make a landmark to be used in separating the plate from the rib.

45.

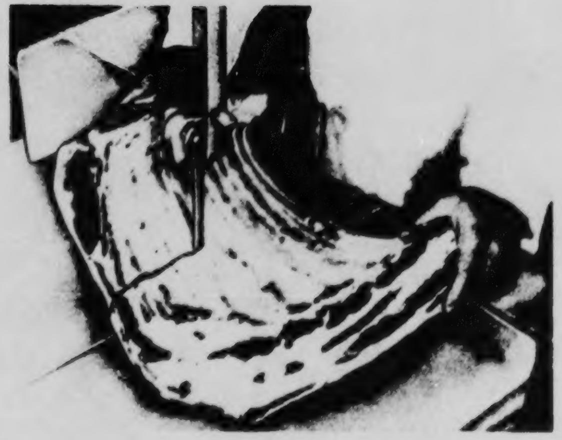


Figure 4-41. Separating plate from rib.

Figure 4-41. To remove the plate (navel), saw from the mark, keeping the line of cut parallel with the back of the rib.

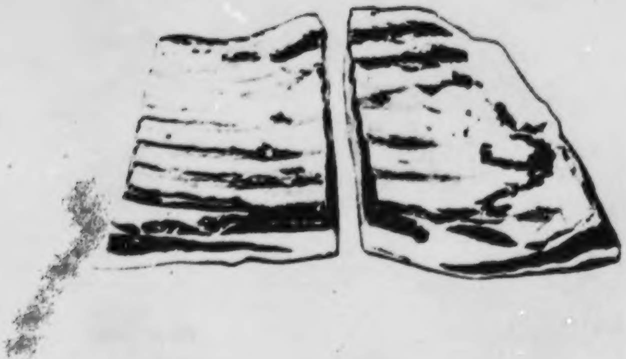


Figure 4-42. Processing short ribs and short plate.

Figure 4-42. To prepare shortribs (left in fig. 4-42), cut across the ribs in approximately 2 inch lengths; then cut between each rib and remove any excess fat.

To prepare the short plate (right in fig. 4-42), cut in between each rib bone and through the rib cartilages; remove the excess fat, and merchandise it as soup meat with bone in, or bone it and grind the meat.

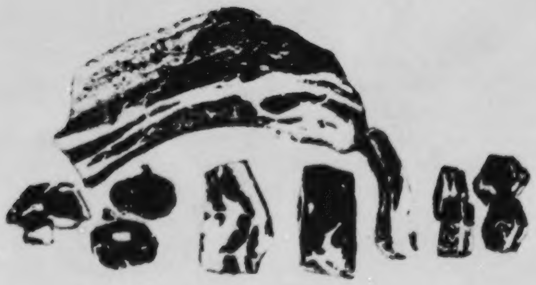


Figure 4-43. Merchandising cuts from plate.

Figure 4-43. The short plate may be merchandised in any of the following ways:

a. With the plate boned, excess fat removed, and used for ground beef.

b. As stew beef (bottom left in fig. 4-43).

c. As skirt steak processed from the skirt meat. The skirt meat is located on the inside of the short plate (second from the left in fig. 4-43).

d. As soup meat (with bone in, processed from the short plate) with the top layer of meat and excess fat remaining on the cut (third from left in fig. 4-43).

e. As short plate with the top layer of lean meat and excess fat removed (bottom center of fig. 4-43).

f. As short ribs cut full length for barbecuing.

g. As short ribs cut short for stewing or braising.

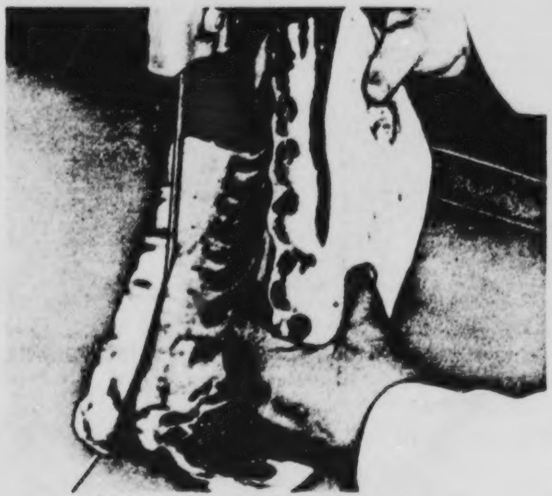


Figure 4-44. Trimming rib.

Figure 4-44. Remove the chine bone and trim featherbones, proceeding as follows:

a. Hold the rib at an angle to cut at the base of the chine bone (where the chine bone contacts the spinal cord channel).

b. Close the guide on the saw to remove any sharp bones and discoloration from featherbones.

c. Do not allow the saw blade to penetrate into the meat.

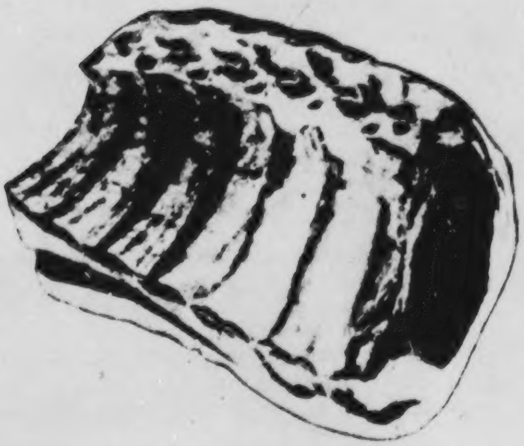


Figure 4-45. Trimmed rib.

Figure 4-45. The trimmed rib can then be processed into steaks or roasts.

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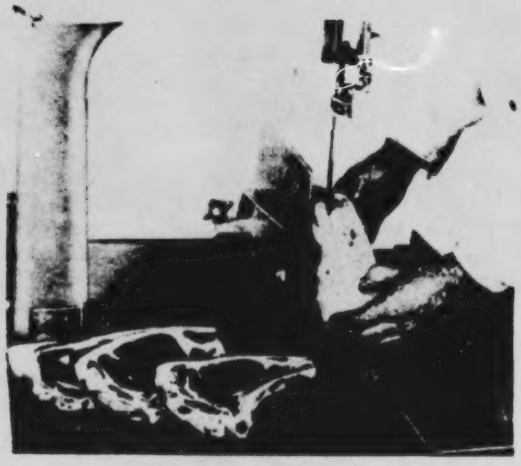

Figure 4-46. Processing rib.

Figure 4-46. Use the following steps in cutting rib steaks and roasts:

a. Cut the first three ribs from the small end for rib steaks or roasts.

b. Use the next three ribs for steaks.

c. Bone the remaining two ribs and process them into rib eye steaks.

d. Determine the thickness of the steaks according to customer demand.

e. Remove any bone dust from the steaks before traying them.

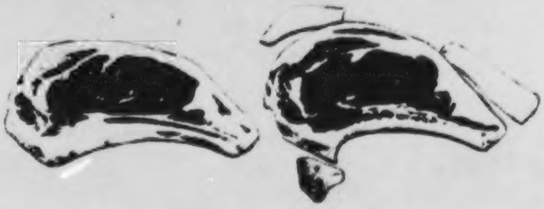

Figure 4-47. Rib steaks, trimmed and untrimmed.

Figure 4-47. The bone in, trimmed rib steak is shown in the left of fig. 4-47. The rib steak, showing the necessary trim of excess bone and fat is shown on the right in this figure.

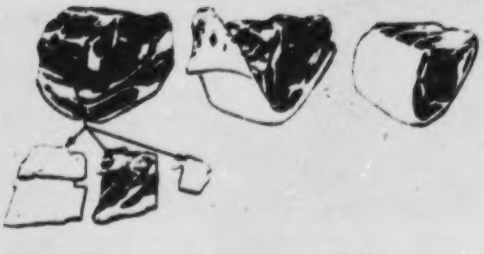

Figure 4-48. Merchandising rib roast.

Figure 4-48. Use the following steps in preparing rib roast:

a. Remove the backbone, the featherbones, and the backstrap (left fig. 4-48).

b. Place a thin (1/4 inch) layer of fat where bones have been removed (center fig. 4-48).

c. Tie the fat into place (right, fig. 4-48). This fat will prevent excess shrinkage in cooking and facilitate carving.

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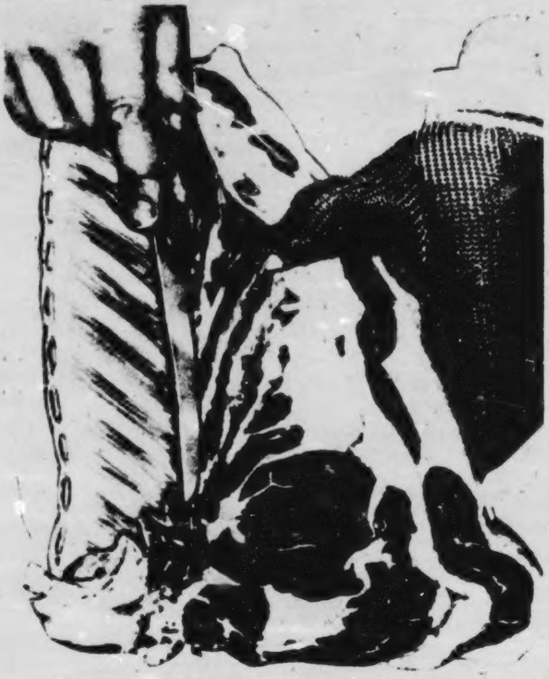

Figure 4-49. Boning rib.

Figure 4-49. To bone standing ribs, proceed as follows:

a. Cut the meat from the rib bones down to the featherbones.

b. Release the meat from the featherbones.

c. Lift the boneless rib from the cradle of bones.

d. Remove the backstrap from the natural seam.

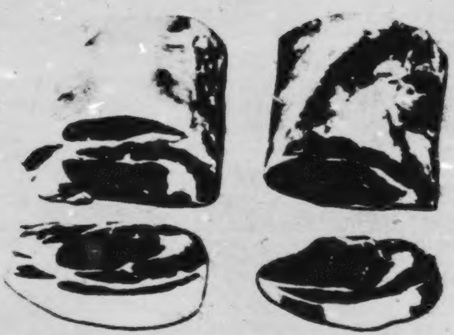

Figure 4-50. Merchandising boneless rib.

Figure 4-50. The boneless rib may be processed into any of the following retail cuts:

a. As boneless rib roast (top left, fig. 4-50). Roasts may be merchandised as flat or rolled.

b. As boneless rib steak (bottom, fig. 4-50).

c. As rib eye roast (top right, fig. 4-50) or rib eye steak (bottom right, fig. 4-50). To process the boneless rib into rib eye, remove the outer covering by following the natural seams. Merchandise the lean trimmings from the cover as stew beef or ground beef.

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Exercises (023):

For exercises 1 through 5, indicate the correct statements by placing a T or F in the blanks provided. Change the incorrect statements to correct ones.

____ 1. The membrane is removed from the plate before processing.

____ 2. The wing section and crosscut section is separated between the fifth and sixth ribs.

____ 3. Separate the plate and rib 5 inches from the chine bone on the small end in a line parallel with the back of the rib.

____ 4. The full rib yields rib steak, rib eye steaks, and short ribs.

____ 5. The back strap is removed from boneless rib cuts.

6. From the following mixed list of acceptable and unacceptable ways to merchandise the short plate, identify those acceptable by placing R (right) in the blank provided. Leave unacceptable ways with nothing before them.

____ a. As soup meat with the top layer of meat and excess fat remaining on the cut.

____ b. As short ribs cut full length for barbecuing.

____ c. As skirt steak processed from the skirt meat located on the outside of the short plate.

____ d. As stew beef.

____ e. With the plate boned and used for ground beef, with excess fat removed or not, depending on the grade of ground beef intended.

____ f. As soup meat with the top layer of meat and excess fat trimmed from the cut.

____ g. As short ribs cut for stewing or braising.

____ h. As short plate with the top layer of lean meat and excess fat removed.

024. Supply missing information in incomplete statements pertaining to processing the brisket and chuck section of the forequarter and resequence correctly the steps in processing the arm section into roasts and steaks.

Processing the Foreshank and Brisket. Figures 4-51, 4-52, and 4-53 show brisket processing and merchandising.

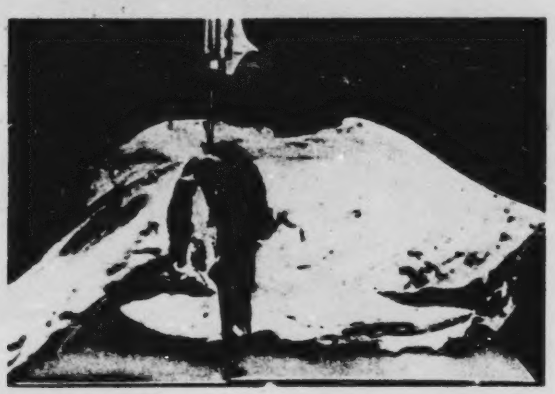


Figure 4-51. Removing foreshank and brisket from cross-cut chuck.

Figure 4-51. Remove the foreshank and brisket from the crosscut chuck, then proceed as follows:

a. Locate the knuckle and cut 1/2 inch above the knuckle on the shoulder side. By cutting 1/2 inch above the knuckle, you avoid a large bone in the first arm roast.

b. Keep the line of cut parallel to the back of the chuck.

c. Saw through the arm and rib bones.

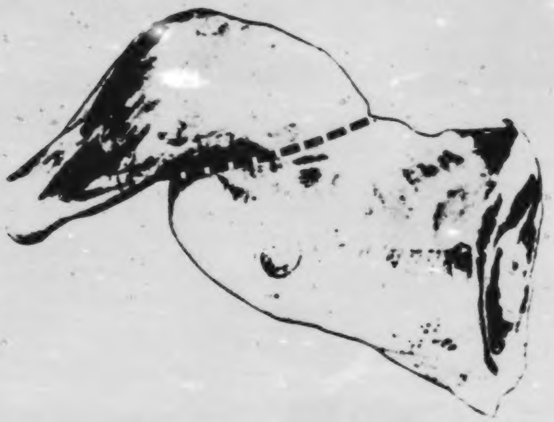


Figure 4-52. Processing foreshank and brisket.

Figure 4-52. Separate the foreshank from the brisket by following the natural seam located underneath the elbow bone (note dotted line in fig. 4-52). Merchandise the foreshank as boneless stew beef, ground beef, or soup bones with meat.

56

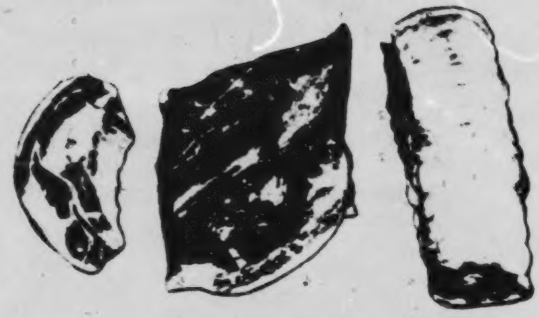


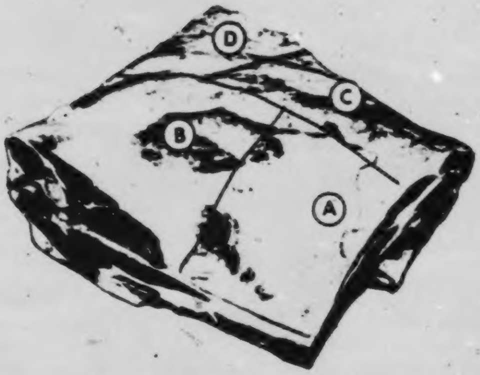
Figure 4-53. Merchandising brisket.

Figure 4-53. The brisket may be merchandised in any of the following ways:

a. Bone-in brisket (left in fig. 4-53) may be used as bone-in soup meat.

b. Boneless flat brisket (center) may be used for roasts of various sizes, stew beef, or ground beef.

c. As rolled brisket, boneless, with the deckle removed (right, fig. 4-53). To prepare large briskets for rolling, cut the brisket lengthwise, reversing one piece, and then tying the two pieces together with the fat sides out. Two small briskets may be rolled and tied together for a roast.



A. Block cross rib
B. Shoulder (arm chuck)
C. Chuck
D. Neck

Figure 4-54. Square chuck, showing location of cuts.

Processing the Chuck Section. Notice figure 4-54 for the location of standard cuts of the square chuck. For processing of these cuts, refer to figures 4-55 through 4-64.

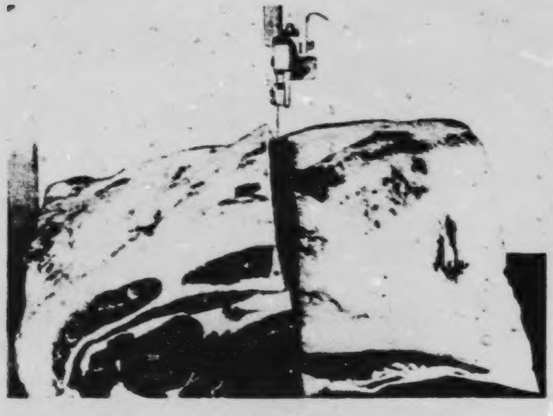


Figure 4-55. Separating chuck and shoulder.

Figure 4-55. Separate the chuck from the shoulder (chuck—left in figure 4-55, shoulder—right in same figure as follows:

a. Locate the blade cartilage in the face of the chuck and mark approximately 1 inch on the arm side.

b. Locate the ball portion of the ball-and-socket joint of the arm on the neck end and mark 1/2 inch from the ball on the chuck side.

c. Connect the two marks and cut parallel with the back of chuck to complete the separation.

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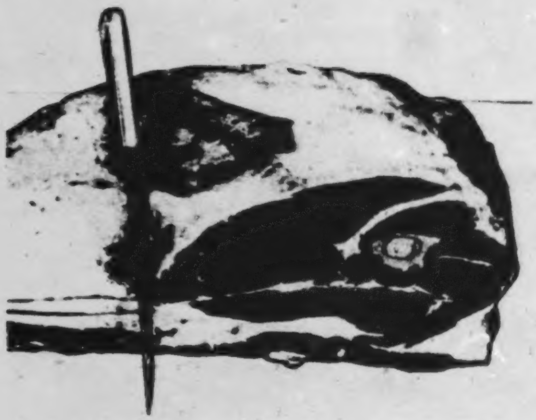


Figure 4-56. Separating block cross rib from arm.

Figure 4-56. Separate the cross rib from the arm as follows:

a. Cut between the third and fourth ribs (count from the neck end).

b. Merchandise the cross rib as pot roasts, stew beef, or ground beef.

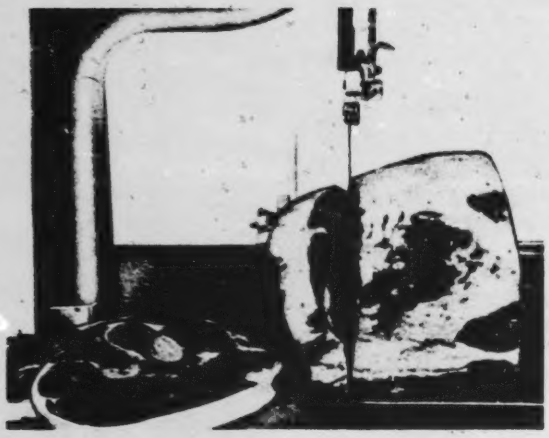


Figure 4-57. Processing arm roasts and steaks.

Figure 4-57. Cut the arm section into roasts and steaks as follows:

a. Cut from the round armbone side back to the large ball bone. Avoid cutting into the large ball bone.

b. Determine the thickness of roasts and steaks according to patron demand.

c. Remove any bone dust.

d. Bone the remaining portion of the arm and use it for roasts, steaks, stew beef, or ground beef.

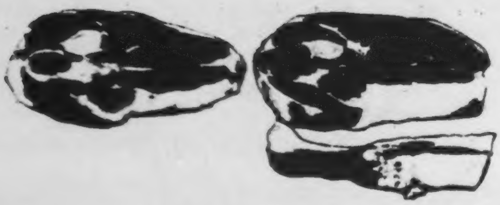


Figure 4-58. Arm roast.

Figure 4-58. On the left in this figure is the trimmed arm roast. The arm roast itself is shown on the right, with the excess fat and bones that should be removed.

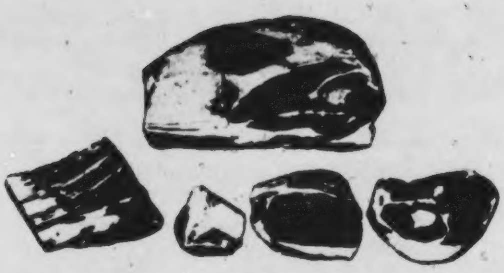


Figure 4-59. Cuts processed from shoulders.

Figure 4-59. Notice the retail cuts processed from the shoulder section (top center, fig. 4-59). They are as follows:

a. Cross rib roast (left bottom, fig. 4-59).

b. Ball bone used for soup bone (second from left, fig. 4-59).

c. Shoulder (boneless) used for roast or steak (second from right, fig. 4-59).

d. Arm roast (extreme right in fig. 4-59).

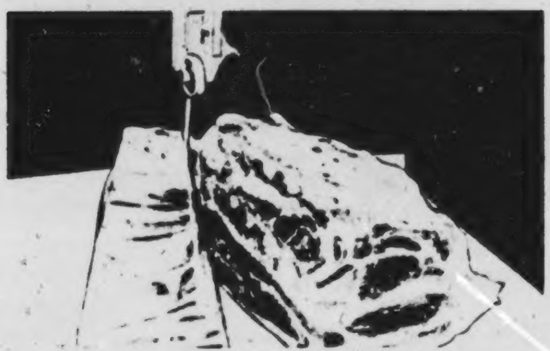


Figure 4-60. Removing knuckle portion of shoulder using alternate method.

Figure 4-60. The knuckle portion of arm may be removed by taking the following steps:

a. After the arm roast has been removed, turn the chuck with the bone side up.

b. Locate the blade cartilage in the face of the chuck and cut approximately 1 inch on the arm side.

c. Cut parallel with the back of the chuck to separate the knucklebone and the remaining arm section.

d. Remove the knucklebone and use it for a soup bone.

e. Use the bone arm section for rolled roast or swiss steak.

f. Use any trimmings for stew beef or ground beef.

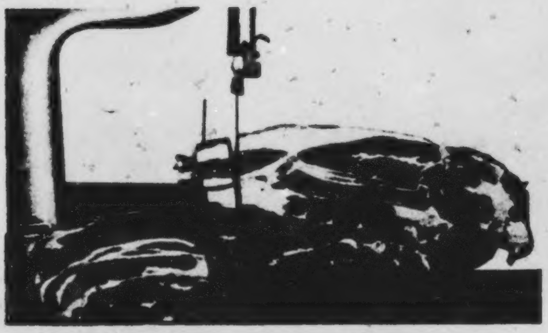


Figure 4-61. Processing chuck.

Figure 4-61. Cut the chuck into roasts and steaks as follows:

a. Trim any excess chine bone.

b. Trim the backbone lightly to brighten its appearance.

c. Begin cutting from the face of the chuck perpendicular to the back of the chuck.

d. Cut chuck roasts and steaks until you reach the heavy deposit of fat in the neck area.

e. Remove any bone dust.

f. Use the neck for roast, stew beef, or ground beef.

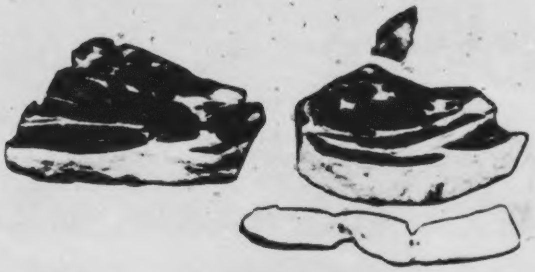


Figure 4-62. Chuck roast.

Figure 4-62. Notice the trimmed chuck roast on the left, this figure, and the one on the right in the same figure, showing the excess fat and bone that should be removed.

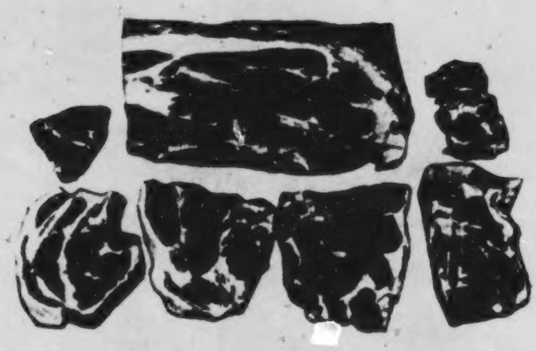


Figure 4-63. Cuts processed from chuck.

Figure 4-63. The retail cuts processed from the chuck section (top center, fig. 4-63) are as follows:

a. Lean meat used for stew or ground beef.

b. First-cut chuck, identified by the presence of the blade cartilage (top left, fig. 4-63).

c. Blade chuck, identified by the presence of the blade bone (bottom left, fig. 4-63).

d. Seven-bone chuck, identified by the portion of the blade bone resembling the number seven (second from right in fig. 4-63).

e. Neck, a less desirable cut (bottom right in fig. 4-63).

f. Neck bones, merchandised as beef neck bones (top right in fig. 4-63).

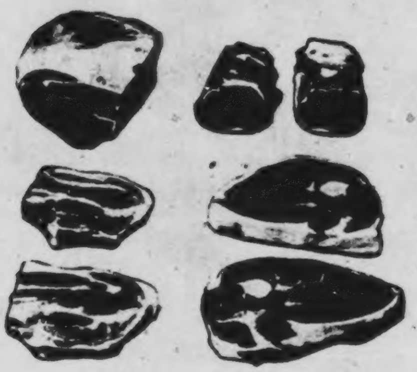


Figure 4-64. Cuts processed from square-cut chuck.

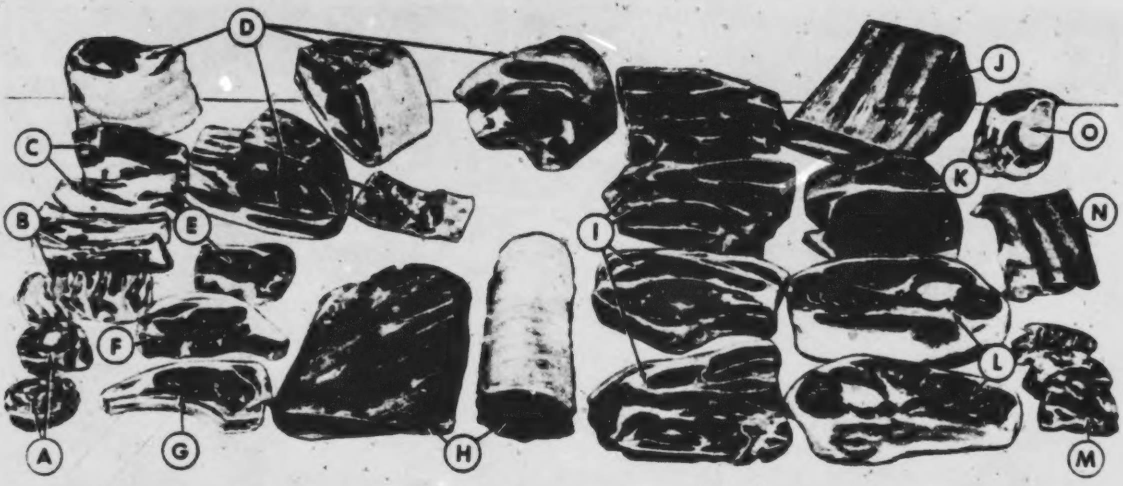
Figure 4-64. The retail cuts processed from the square-cut chuck are as follows:

a. As blade chuck (center top, fig. 4-64).

b. As boneless shoulder rolled roasts (second from top, fig. 4-64).

c. As blade chuck roast (left, in bottom two rows of fig. 4-6).

d. As arm roast (right, in bottom two rows of fig. 4-64).



- A. Skirt (filet of skirt) steak
- B. Short ribs, cut short and long
- C. Short plate, flat covering removed
- D. Rib roasts
  - Rolled rib roast, boneless
  - Standing rib roast with covering tied, replacing featherbones
  - Standing rib, featherbones removed
  - Standing rib featherbones still intact
- E. Rib eye steak
- F. Rib steak, boneless
- G. Rib steak, bone-in
- H. Boneless brisket
  - Flat
  - Rolled and tied
- I. Chuck roasts
- J. Block (English, Boston)
- K. Shoulder, boneless
- L. Arm roasts
- M. Neck bones
- N. Rib bones with finger meat
- O. Soupbone

Figure 4-65. Cuts processed from the forequarter.

Cuts Processed From Forequarters. Figure 4-65 shows the retail cuts processed from a forequarter of beef.

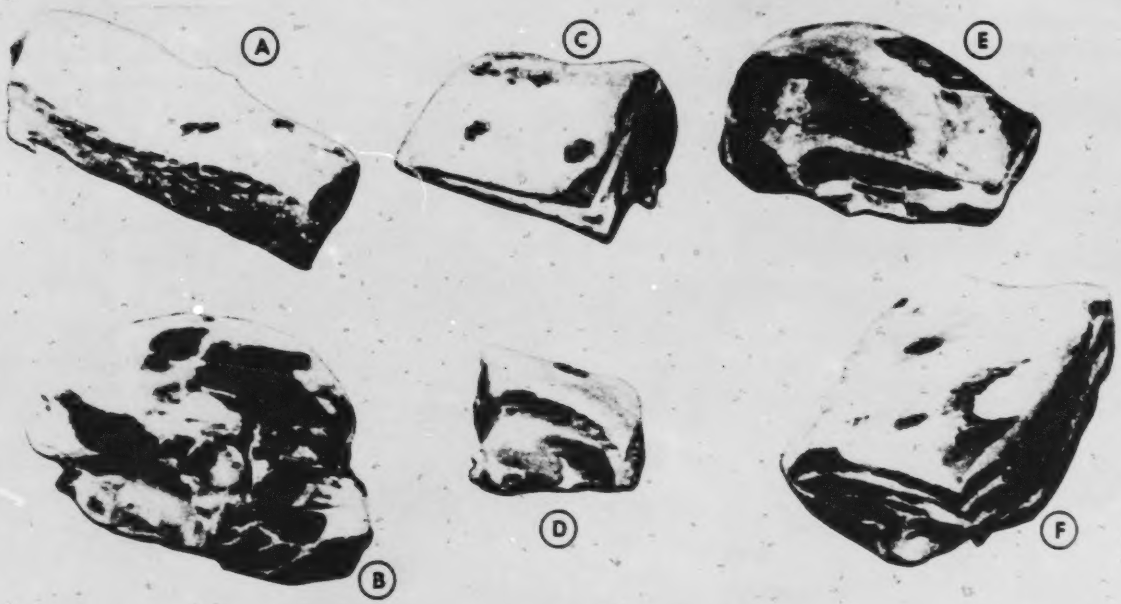
Exercises (024):

Complete exercises 1 through 4 by filling in the blanks with the appropriate word or words.

1. To avoid a large bone in the first arm roast, separate the foreshank and brisket from the crosscut chuck ________ inch above the knuckle on the shoulder side.
2. Separate the __________ from __________ 1 inch from the blade cartilage.
3. When the cross rib is separated from the arm, __________ ribs are left on the cross rib section.
4. The first cut processed from the chuck section is ______________ roast.
5. The following are steps in processing the arm section into roasts and steaks correctly. Resequence their order from the incorrect one given, deleting any not needed steps:
   a. Determine the thickness of roasts or steaks according to patron demand.
   b. Bone the remaining portion of arm, using it for roasts, soup meat, and ground beef.
   c. Avoid cutting into the large ball bone as you cut from the round armbone side back to the large ball bone.
   d. Make ground beef, roasts, steaks, and stew beef out of the remaining portion of arm, after boning it.
   e. Cut from the round armbone side back to the large ball bone; then slice carefully through its center.
   f. Remove any bone dust.

025. Discriminate between true and false statements concerning fabricated, sub-primal cuts of beef and supply missing information in statements about such fabricated cuts.

Fabricated Cuts of Beef. The major subprimal cuts of beef are shown in figure 4-66. Market-ready cuts may vary depending on the packer's production methods. For example, some packers divide the full loin (a) into three cuts—sirloin butt, short loin, and butt tenderloin. For a detailed description of each cut, follow fitures 4-67 through 4-72.



A. Loin
B. Round
C. Rib
D. Sirloin tip (knuckle)
E. Armbone chuck (shoulder)
F. Blade chuck

Figure 4-66. Major subprimal cuts of beef.

55

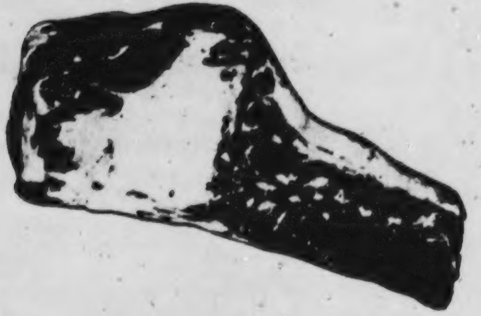


Figure 4-67. Full loin.

Figure 4-67. The full loin contains the 13th rib where the side was separated between the 12th and 13th ribs. The flank is cut 3 inches above the eye muscle on the rib end, and the tenderloin is trimmed within 1/2 inch of fat. The sirloin end is separated from the rump parallel with the rib end to give the correct loin angle for retail cutting of bone-in sirloin steaks. Fat is trimmed to within 1/2 inch. The loins are packed one in a box.

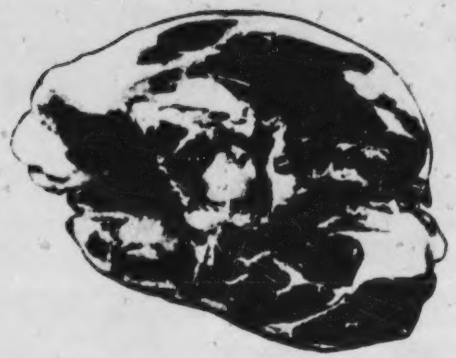


Figure 4-68. Round.

Figure 4-68. The hindshank is removed at the stifle joint. The aitch (rump) bone, sacral vertebrae, and tail joints are removed. The round leg bone remains intact. Exterior fat is trimmed to within 1/2 inch. One round is packed in a box with one sirloin tip.

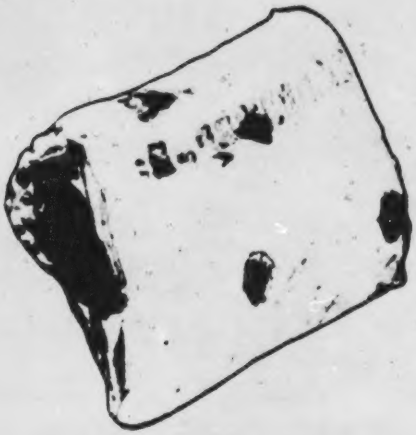


Figure 4-69. Rib.

Figure 4-69. The rib is separated from the chuck between the fifth and sixth ribs. The rib is separated from the plate 3 inches above the eye of the loin end and 4 inches above the eye of the chuck end. The chine bone is removed along a straight line where the vertebra joines the featherbones. The blade bone remains in. Exterior fat is trimmed to within 1/2 inch. Ribs are packed two in a box.

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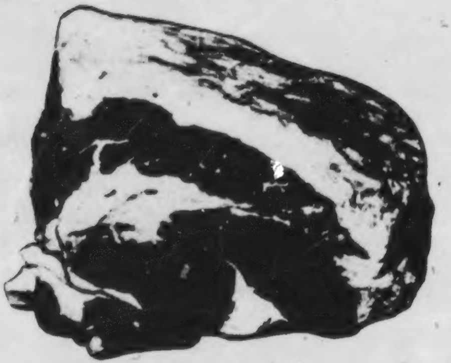


Figure 4-70. Sirloin tip.

Figure 4-70. The sirloin tip is the portion of the primal round that is underneath the round bone. The kneecap and connective tissues are removed. All exterior fat is trimmed within 1/2 inch. The sirloin tip is packed in a box with the round.

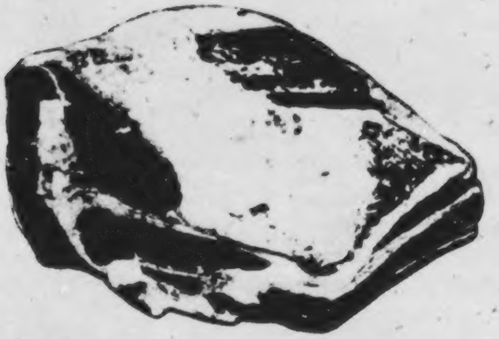


Figure 4-71. Arm chuck.

Figure 4-71. Armbone chuck (shoulder) is the portion of the square chuck that remains after splitting in half. Exterior fat is removed to within 1/2 inch. The shoulder is packed one in a box with the blade chuck.

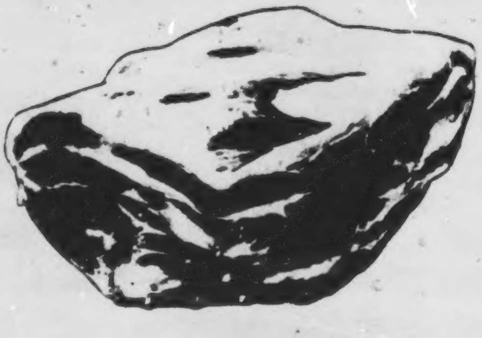


Figure 4-72. Blade chuck.

Figure 4-72. The blade chuck is half of the fine rib square chuck. The tip of the neck is removed at the atlas joint. The entire throat area is trimmed completely free of blood clots, glands, and surface fat. Exterior fat is trimmed to within 1/2 inch. The blade chuck is packed one in a box with the shoulder.

Exercises (025):

Identify exercise statements 1 through 4 as being either true or false:

____ 1. One inch of exterior fat is left on all subprimal cuts.

____ 2. The round is received minus the aitch bone, sacral vertebrae, and tail joints.

____ 3. The rib is separated from the chuck between the fourth and fifth ribs.

____ 4. The sirloin tip and round are packed in separate boxes.

5. Supply the missing words in each of the following statements about fabricated cuts of beef:
   a. Some packers divide the full loin into three cuts: sirloin butt, __________ __________, and butt tenderloin.
   b. The portion of the square chuck remaining after splitting in half is the __________ __________ (shoulder).
   c. The __________ __________ is one half of the fine rib square chuck.
   d. The blade chuck is packed one in a box with the ____________________.

4-4. Cutting Differences Between Veal and Mature Beef

Veal differs from mature beef in structure and cutting procedures. These are covered in this section to the degree you need to know them for your job.

026. Associate various types of meat with appropriate related characteristics.

Listed below are the five major cutting differences existing between veal and mature beef:

a. The first difference is that veal is received in whole sides. Mature beef has been separated into forequarter and hindquarter before receiving.

b. A beef hindquarter contains the last (13th) rib, but we separate a veal side behind the last rib. All ribs remain on the forequarter.

c. Notice the greater size in mature beef (areas 3, 4, and 5, fig. 4-3) than in veal (areas 3 and 4, fig. 4-73). The areas of veal are processed into blade and armbone chops and roast. The corresponding areas of beef yield blade and arm roasts and steaks. In veal these areas are called *shoulder,* but in mature beef they are called *chuck.* Rib chops are cut from veal rib; whereas mature beef yields rib steaks and roasts.

d. In the veal leg, area, 12, figure 4-73, notice that you cut completely through the round bone just below the lower end and process cutlets and roasts. In beef, two major cuts are made from this part (area 3, the round and area 4, the sirloin tip). In veal, only one major cut is made.

e. One final difference: Area 13 (veal hindshank, fig. 4-73) is one major cut, while the same beef area is two cuts (area 1, shank and 2, heel of round, fig. 4-3).

Exercises (026):

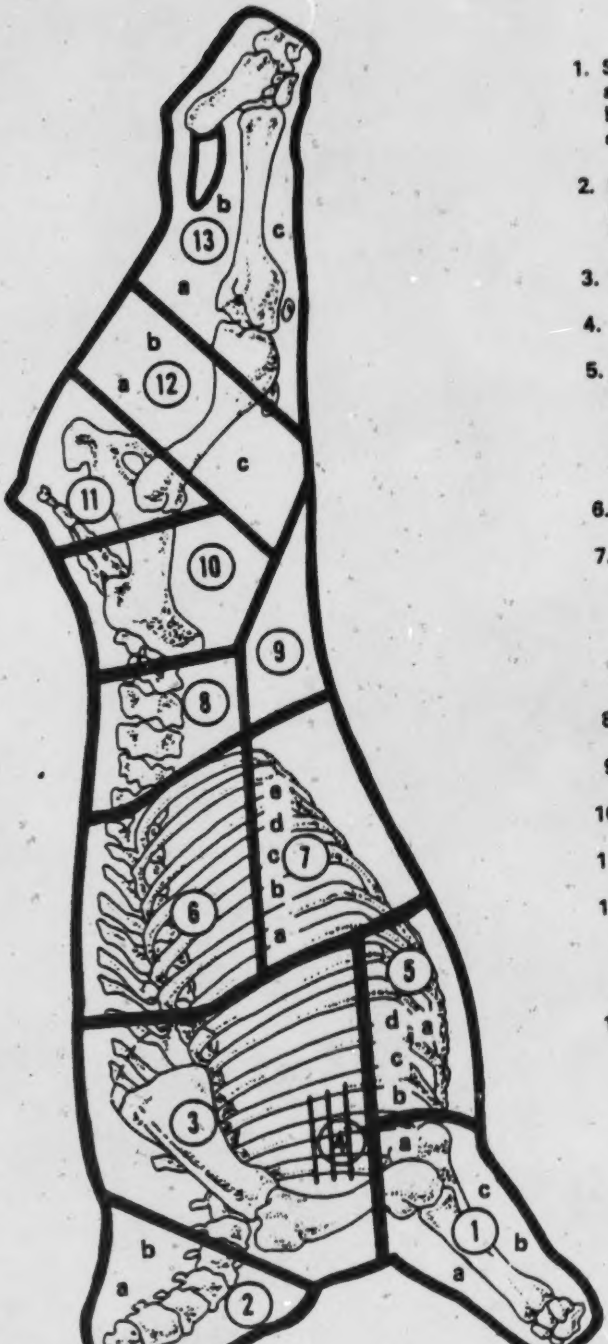
1. Match each of the types of meat given in column B with its related appropriate characteristics of meat, found in column A, by writing each numbered type (column B) beside its corresponding lettered characteristic (column A). NOTE: Each item in column B may be used more than once.

Column A *Characteristics*	*Column B* *Types of Meat*
____ a. Received as a whole side.	1. Beef.
____ b. Rib chips.	2. Veal.
____ c. Blade roasts.	
____ d. Forequarter received separated.	
____ e. Rib roasts.	
____ f. Round area constitutes single major cut.	
____ g. Sirloin tip removed separately.	
____ h. All ribs on forequarter.	

4-5. Veal Processing

We will consider a number of veal processing steps. The next objective covers separating the hindquarter and forequarter and processing the forequarter.

027. Associate various steps in veal forequarter processing with their related appropriate tasks.



1. Shank
   - a. Ground veal
   - b. Stew
   - c. Chop suey
2. Neck
   - a. Ground veal
   - b. Chop suey
3. Shoulder, blade bone chops
4. Shoulder, arm bone chops
5. Brisket
   - a. Pocket veal roast
   - b. Stew
   - c. Chop suey
   - d. Ground veal
6. Rib-rib chops
7. Breast
   - a. Pocket veal roast
   - b. Riblets
   - c. Stew
   - d. Braising
   - e. Ground veal
8. Loin-loin chops
9. Flank, ground veal
10. Sirloin-chops or roast
11. Rump, boned and rolled
12. Leg
    - a. Cutlets
    - b. Roast
    - c. Cutlets
13. Shank
    - a. Stew
    - b. Chop suey
    - c. Ground veal

Figure 4-73. Skeletal chart of side of veal with cutting lines.

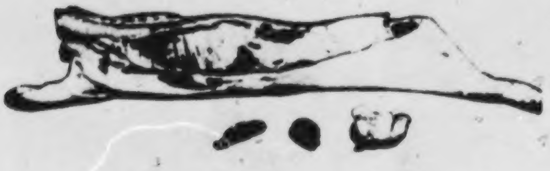


Figure 4-74. Side of veal.

Separating Hindquarter From Forequarter. In this separation procedure, first you must place the veal side on the preparation table, meat side down, as shown in figure 4-74. Then trim any discolored surfaces, remove the kidney knob and spinal cord, and hang it tender. Cut through the meat behind the 13th rib, leaving all ribs on the forequarter; then saw through the backbone, as shown in figure 4-75.

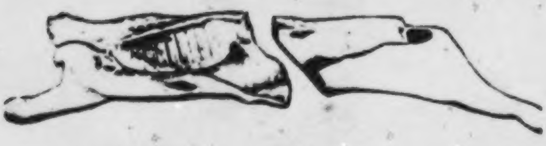


Figure 4-75. Separating hindquarter from forequarter.

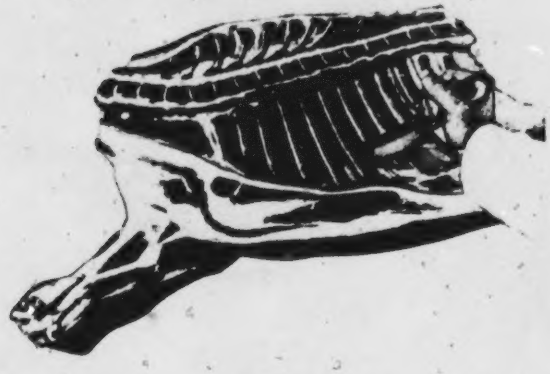


Figure 4-76. Marking off rib from shoulder.

Processing Forequarter. For the forequarter processing steps discussed next, refer to figures 4-76 through 4-88.

Marking off rib from shoulder. This is shown in figure 4-76. First, count from the neck end and mark between the sixth and seventh ribs. Be sure that the mark penetrates through the meat to the opposite side.

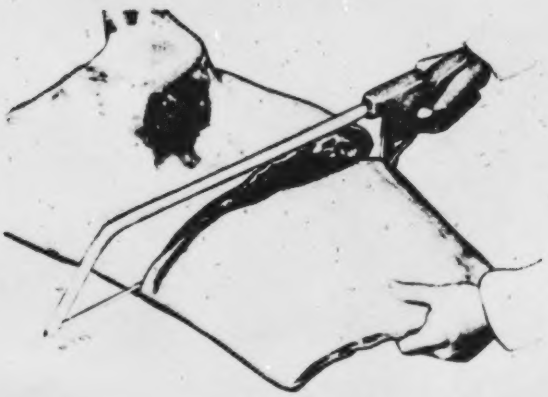


Figure 4-77. Separating rib and navel from shoulder and breast.

Separating rib and navel from shoulder and breast. This is shown in figure 4-77. Now turn the forequarter over and using the mark as a guide, separate it by cutting between the sixth and the seventh ribs.

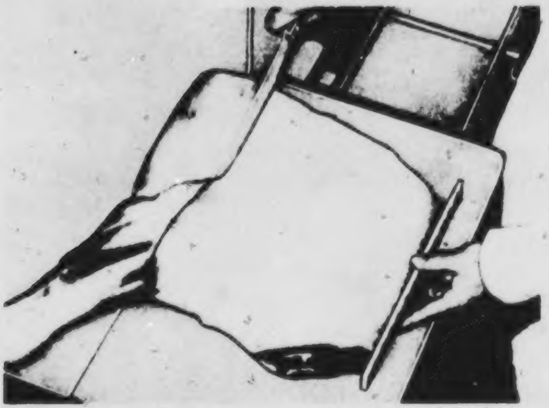


Figure 4-78. Removing foreshank and breast from shoulder.

Removing the foreshank and breast from shoulder. This is shown in figure 4-78. Locate here the joint where the armbone joines the foreshank and mark 1/2 inch on the shoulder side. Be sure to mark off parallel to the back and then separate it. Notice that figure 4-79 shows you different ways to merchandise the foreshank and brisket. These are as follows:

a. As shank, whole (upper left-hand corner, fig. 4-79).

b. As shank, cut for stew (left side, second from top, fig. 4-79).

c. As veal stew, boneless (lower left-hand corner, fig. 4-79).

d. Using the large knuckle portion of the shank for a soupbone.

e. As ground veal for meat loaf.

f. As ground veal.

g. As patties.

h. As breast, whole for stuffing (cut a pocket in the breast before merchandising).

i. As breast for stewing (cut into small pieces approximately 1 inch wide).

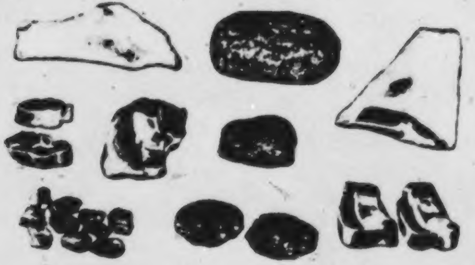


Figure 4-79. Merchandising foreshank and breast.

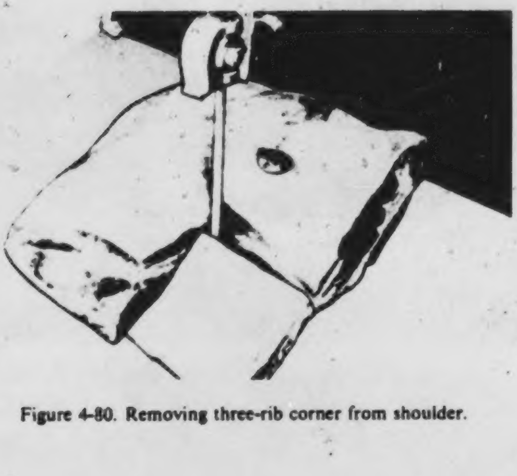


Figure 4-80. Removing three-rib corner from shoulder.

Removing three-rib corner. This is shown in fig. 4-80 and involves the following:

a. Locate the bladebone cartilage and mark approximately 1/2 inch on the shoulder side.

b. Cut parallel to the back through the first three rib ones.

c. Cut parallel to and between the third and fourth ribs to the first line of the cut to remove. The chops processed from the remaining shoulder will have better eye appeal with the three-rib corner removed.

d. Process the three-rib corner into riblets for stewing or braising, or bone the meat for grinding.

Cutting armbone chops. This is shown in figure 4-81 and involves the following:

a. Cut chops from the armbone side down to, but not including, the large knucklebone.

b. Trim any excess fat and bone and remove any bone dust.

c. Cut the knuckle portion into chops or roasts. Be sure to trim the knucklebone and any excess fat before merchandising.

d. The arm portion of the shoulder may also be merchandised as roasts.

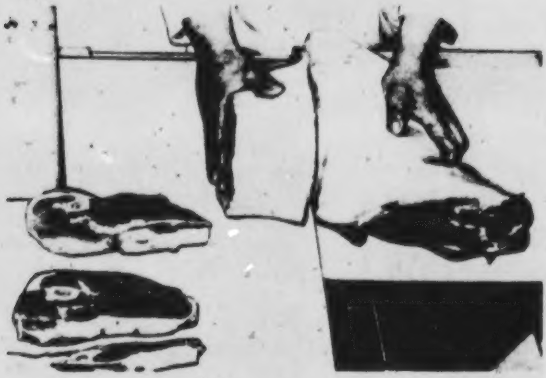


Figure 4-81. Cutting armbone chops and roast.

Cutting blade chops and roasts. This is shown in figure 4-82 and involves the following:

a. Remove any excess chine bone from the remaining portion of the shoulder.

b. Cut chops or roasts perpendioular to the back to the deposit of fat and gland in the neck.

c. Trim any excess fat and remove any bone dust from the chops or roasts.

d. The shoulder may also be boned and processed into boneless roast.

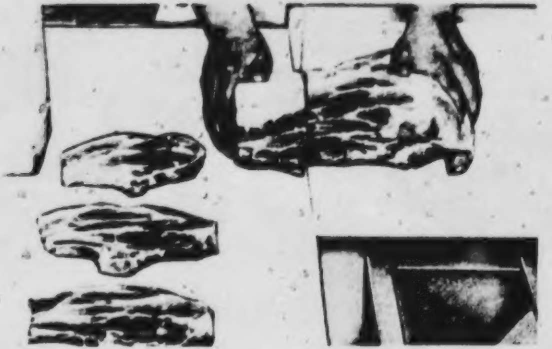


Figure 4-82. Cutting blade chops and roasts.

Separating breast from ribs and processing breast. This process involves the following:

a. Mark 4 inches from the chine bone on the small end, cut parallel to the back, and separate the breast from the ribs, as shown in figure 4-83.

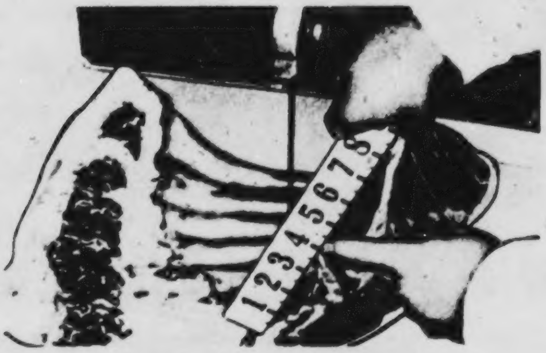


Figure 4-83. Separating breast from ribs.

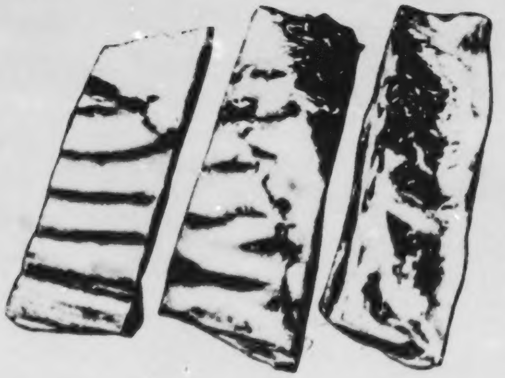


Figure 4-84. Cutting breast into three pieces of uniform size.

b. Cut the breast into three pieces of uniform size, as shown in figure 4-84.

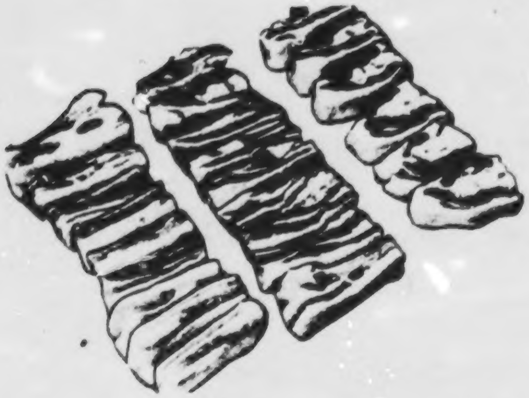
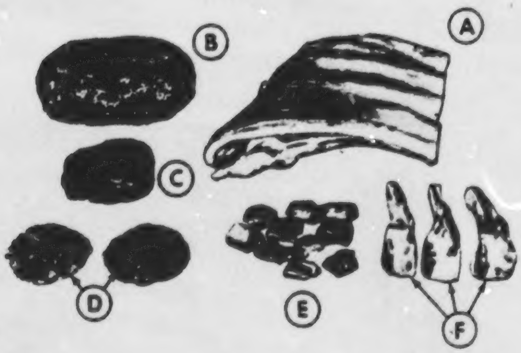


Figure 4-85. Slicing into uniform strips for stewing or braising.

c. Slice the three pieces into uniform strips for stewing or braising, as shown in figure 4-85.



A. **Breast whole for stuffing (cut pocket in breast before merchandising)**
B. **Ground veal for meatloaf**
C. **Ground veal**
D. **Patties**
E. **Stew, boneless**
F. **Stew, bone-in (cut approximately 1 inch thick)**

Figure 4-86. Merchandising breast.

d. Refer to figure 4-86 for procedures in merchandising the breast.

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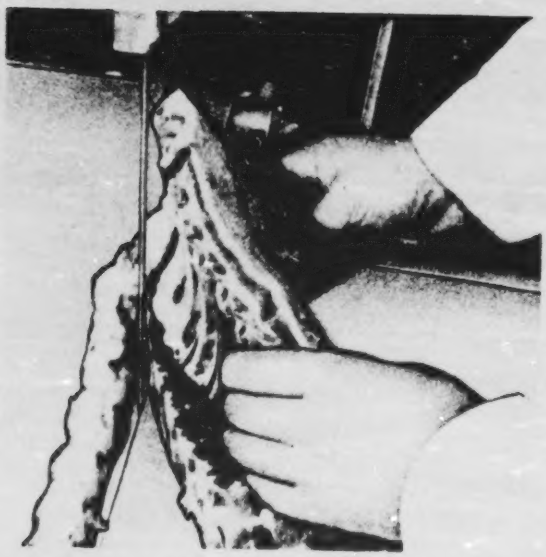


Figure 4-87. Removing chine bone from ribs.

Processing rib chops. Remove the chine bone from ribs, as shown in figure 4-87. But see figure 4-88 for processed rib chops with any excess fat and all bone dust removed.

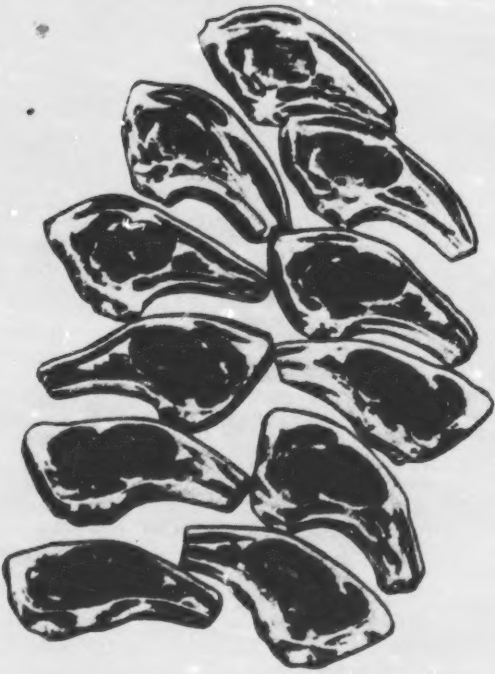


Figure 4-88. Processing rib chops.

70

Exercises (027):

1. Match each of the processing steps given in column B with its related appropriate task, found in column A, by writing each numbered step (column B) beside its corresponding lettered task (column A). NOTE: Each item in column B may be used only once.

Column A *Tasks*	*Column B* *Processing Steps*
_____ a. Cut behind 13th rib.	1. Separating rib and navel from shoulder and breast.
_____ b. Cut between sixth and seventh ribs.	2. Cutting armbone chops and roasts.
_____ c. Separate where the armbone joins foreshank.	3. Removing foreshank and breast from shoulder.
_____ d. Cut down to large knucklebone.	4. Separating hindquarter from forequarter.
_____ e. Mark 4 inches from chine bone.	5. Separating breast from ribs.

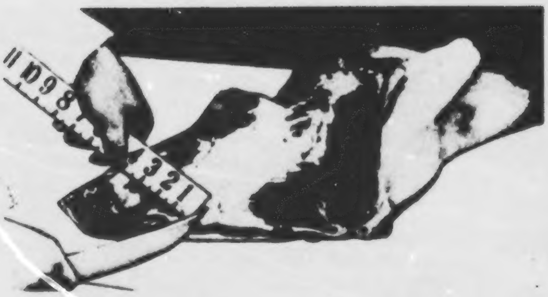


Figure 4-89. Marking for removing flank.

Figure 4-90. Removing flank.

028. Associate various steps in veal hindquarter processing with their appropriate tasks.

Hindquarter Processing. As you process the veal hindquarter follow figures 4-89 through 4-96.

Removing flank. This is shown in figures 4-89 and 4-90, is done this way:

a. Lay the hindquarter on the preparation table, with the skin side down.

b. Mark 4 inches from the chine bone on the loin end.

c. Cut through the cod fat to the natural seam.

d. Follow the contour of the round (knuckle side) to the lower flank.

e. Cut in a straight line to the 4-inch mark to remove.

f. Remove any membrane from the inside of the flank and merchandise this as stew or ground.

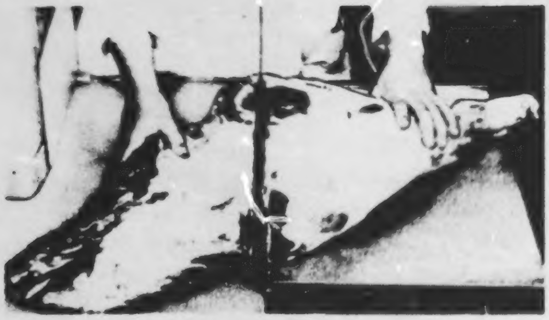


Figure 4-91. Separating rump and loin from leg.

Separating rump and loin from leg. This is shown in figure 4-91. To do this, mark 1 inch from the aitch (rump) bone, cut parallel to the aitch bone, and separate them.

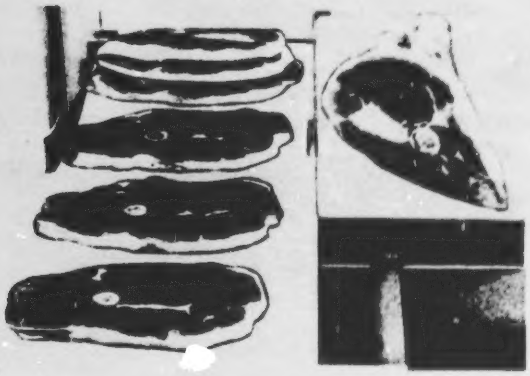


Figure 4-92. Processing veal cutlets.

Processing veal cutlets. This is shown in figure 4-92 and is done as follows:

a. Slice cutlets of desired thickness until the heavy deposit of fat in the center of the leg is reached.

b. Trim any excess fat and dark or dry areas and remove all bone dust.

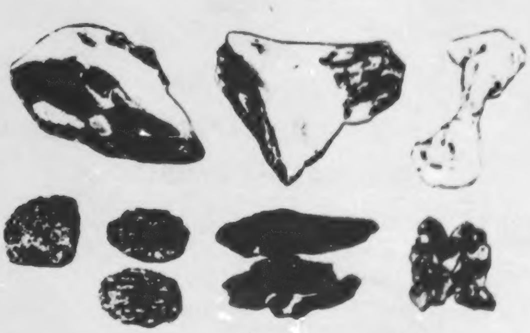


Figure 4-93. Processing back portion of leg.

Processing back portion of leg. This is shown in girure 4-93. To process the back portion of leg (center top of fig. 4-93) proceed as follows:

a. Remove the shankbone (top right, fig. 4-93) at the stifle joint.

b. Saw off the large portion of the legbone at the stifle joint.

c. Fold the heel meat into the area where the portion of the legbone was removed.

d. Tie this up with roast cord.

e. Merchandise this as a semiboneless roast.

Top left in figure 4-93 can be seen the leg roast, semiboneless, and tied. In the bottom left of this figure you can see ground veal and veal patties, (bottom, second from left, fig. 4-93). The back portion of the leg may also be processed and merchandised as cubed steaks (bottom, second from right, fig. 4-93) or boneless veal stew (bottom right, fig. 4-93).

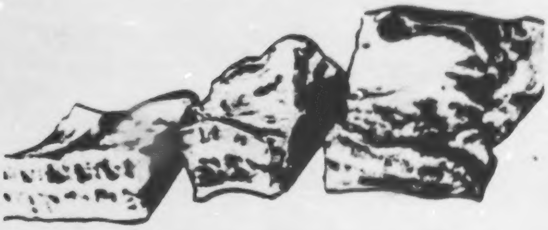


Figure 4-94. Separating loin, sirloin, and rump.

Separating loin, sirloin, and rump. This is shown in figure 4-94. To separate, do this:

a. Remove the loin from the sirloin at the hipbone.

b. Separate the sirloin by cutting 1 inch from the ball end of the aitch bone and parallel with the loin end.

c. Merchandise the rump as bone-in or boneless roast.

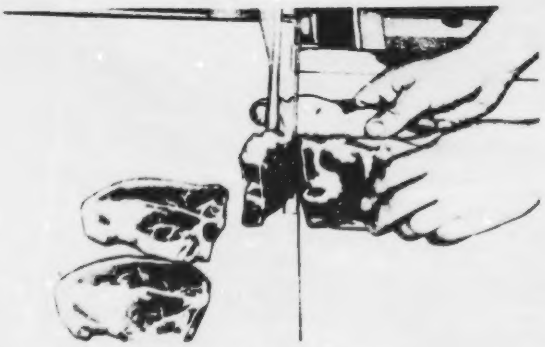


Figure 4-95. Processing loin chops.

Processing loin. This is shown in figure 4-95. To do this, remove the chine bone, process the loin into chops or roasts, trim any excess fat, and remove all bone dust.

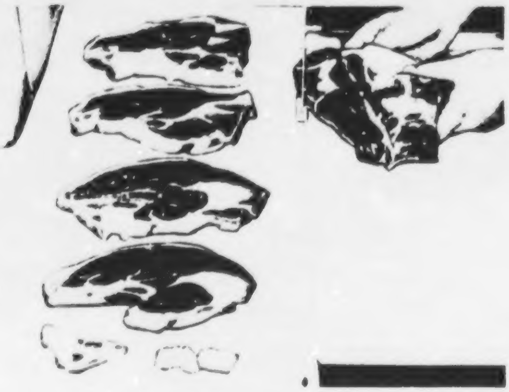
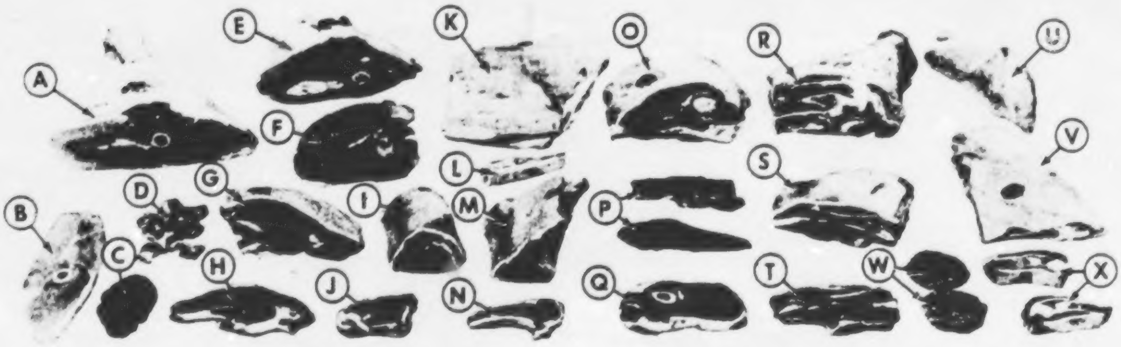


Figure 4-96. Processing sirloin chops.

Processing sirloin. This is shown in figure 4-96. Cut chops or roasts into desired thickness and remove any excess bones from the chops (bottom left, fig. 4-95). Trim any excess fat and remove all bone dust.

Cuts Processed From Veal Carcass. Notice the cuts processed from a veal carcass shown in figure 4-97.



A. Leg of veal
B. Veal cutlets (round steak)
C. Veal kidney
D. Stew, boneless
E. Leg roast, semiboneless
F. Rump roast
G. Sirloin roast
H. Sirloin chop
I. Loin of veal
J. Loin chop
K. Breast (navel) for stuffing
L. Breast (navel) for stew
M. Rib of veal
N. Rib chop
O. Armbone roast
P. Veal cubed steak
Q. Armbone chop
R. Blade and neck portion of shoulder
S. Blade roast
T. Blade chop
U. Shank, whole
V. Breast (brisket) for stuffing
W. Veal patties
X. Breast (brisket) for stew

Figure 4-97. Cuts processed from a side of veal.

Exercises (028):

1. Match each of the veal hindquarters processing steps given in column B with its related appropriate task, found in column A, by writing each numbered step (column B) beside its corresponding lettered task (column A). NOTE: Each item in column B may be used only once.

Column A *Tasks*	*Column B* *Processing Steps*
____ a. Mark 4 inches from chine bone on loin end.	1. Separating loin, sirloin, and rump.
____ b. Cut parallel to aitch bone.	2. Processing sirloin chops.
____ c. Cut 1 inch from ball end of aitch bone.	3. Removing flank.
____ d. Remove excess bones from chops or roasts.	4. Separating rump and loin from leg.

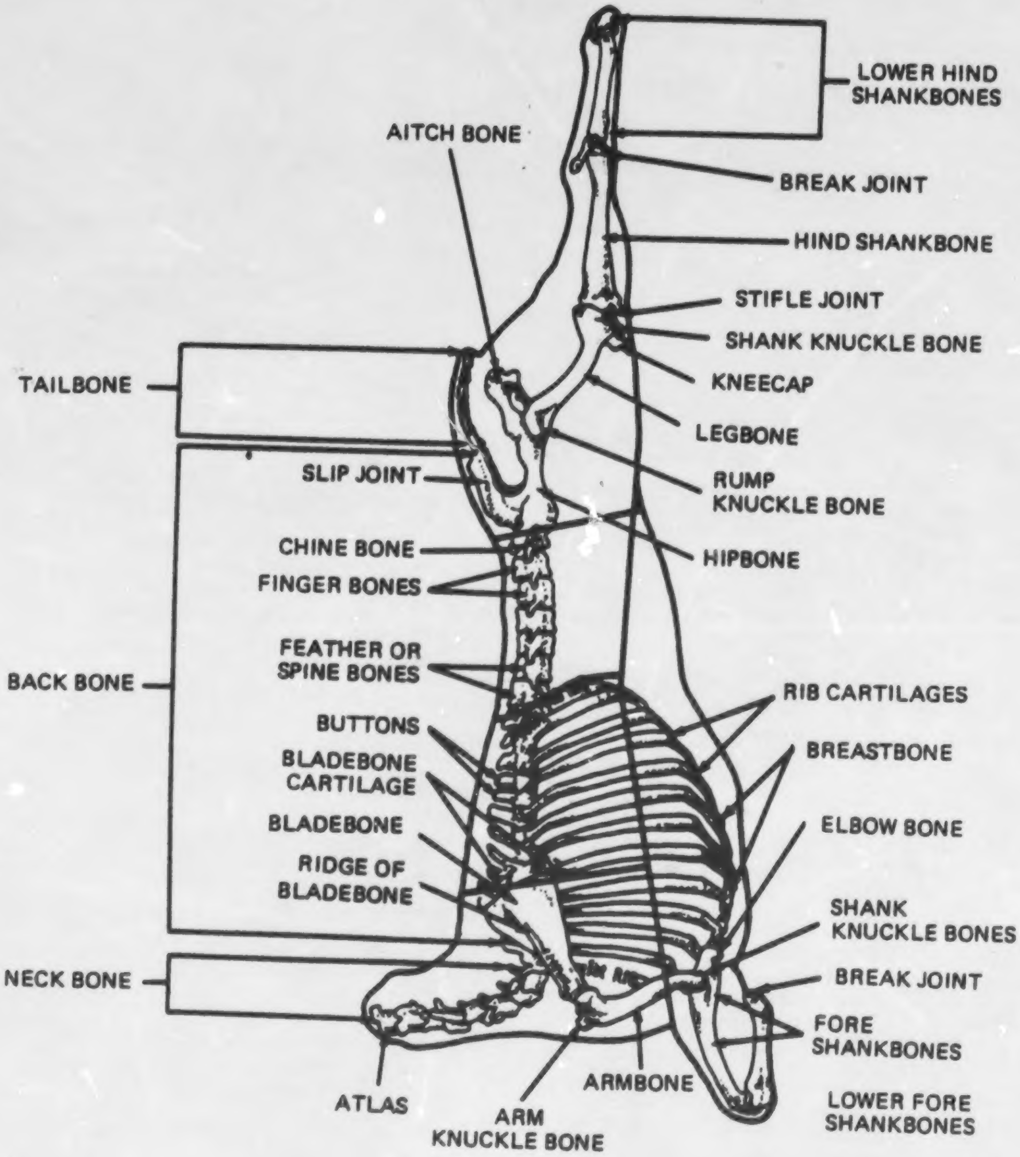

LOWER HIND SHANKBONES
AITCH BONE
BREAK JOINT
HIND SHANKBONE
STIFLE JOINT
SHANK KNUCKLE BONE
KNEECAP
TAILBONE
LEGBONE
SLIP JOINT
RUMP KNUCKLE BONE
CHINE BONE
HIPBONE
FINGER BONES
FEATHER OR SPINE BONES
BACK BONE
RIB CARTILAGES
BUTTONS
BREASTBONE
BLADEBONE CARTILAGE
BLADEBONE
ELBOW BONE
RIDGE OF BLADEBONE
SHANK KNUCKLE BONES
NECK BONE
BREAK JOINT
FORE SHANKBONES
ARMBONE
ATLAS
ARM KNUCKLE BONE
LOWER FORE SHANKBONES

Figure 4-98. Skeletal chart of side of lamb.

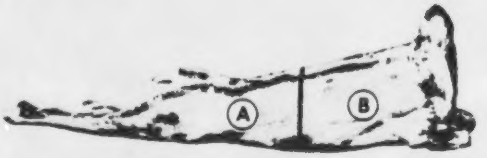
4-6. Cutting Differences Between Lamb and Beef

As in beef and veal, there are particular cutting procedures that apply only to lamb. These are taken up here.

029. Differentiate between correct and incorrect statements of cutting differences in processing lamb.

A lamb skeleton, shown in figure 4-98, is obviously very similar to a beef skeleton; of course, it is much smaller. Another difference between the two is that, whereas a lamb hindshank contains "break joints," beef does not.

The terms "hindsaddle" and "foresaddle" are used to describe the two basic divisions of lamb carcasses, shown in figure 4-99. However, lamb carcasses are not split lengthwise into sides. Also, when saddles are made in lamb, the two forequarters or hindquarters are left joined at the backbone. Finally, while lamb loin yields chops, beef loin yields steaks.



A. Hindsaddle
B. Foresaddle

Figure 4-99. Hindsaddle and foresaddle.

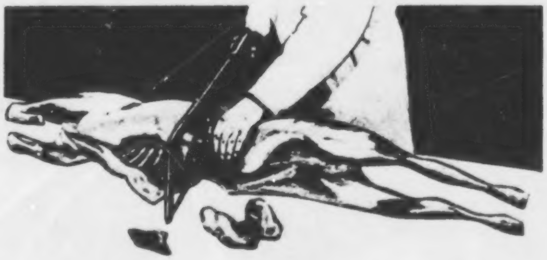


Figure 4-100. Separating hindsaddle from foresaddle.

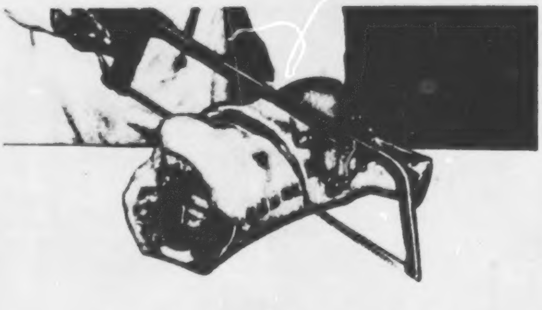


Figure 4-101. Separating ribs from shoulder.

Exercises (029):

Identify the statements about lamb and beef cutting differences in exercises 1 through 3, as either true or false by placing a T or F in the blanks provided.

____ 1. You receive beef in quarters, but lamb may be received in carcass form.
____ 2. Lamb carcasses are split into sides.
____ 3. Lamb loin yields lamb chops.

4-7. Lamb Processing

In discussing the processing of lamb, we will proceed in the following order:

- Separating the foresaddle from the hindsaddle.
- Processing foresaddle.
- Processing hindsaddle.

030. Indicate whether selected statements correctly reflect lamb processing procedures. If a statement is invalid, correct it.

Separating the Foresaddle From Hindsaddle. This is shown in figure 4-100. To perform this separation, first remove kidneys and trim any dark surfaces from the neck area. Then cut behind the 13th rib, leaving all of the ribs on the foresaddle.

Processing Foresaddle. As you study the processing of lamb foresaddle, refer to figures 4-101 through 4-111.

Figure 4-101. Begin by separating the ribs from the shoulder between the sixth and the seventh ribs (counting from the neck end).

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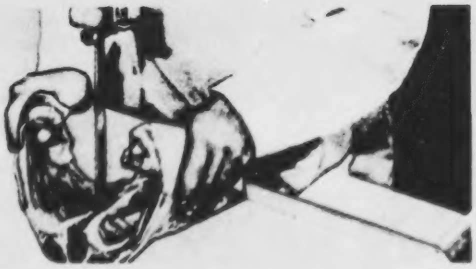

Figure 4-102. Processing rib section.

Figure 4-102. First, saw through the backbone of the rib (rack) section, leaving equal amount of backbone on each side.

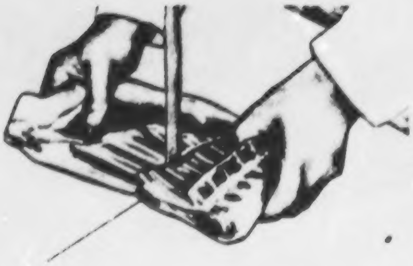

Figure 4-103. Removing breast from ribs.

Figure 4-103. Here, measure 4 inches from the chine bone and cut parallel to the back of the rib to remove the breast.

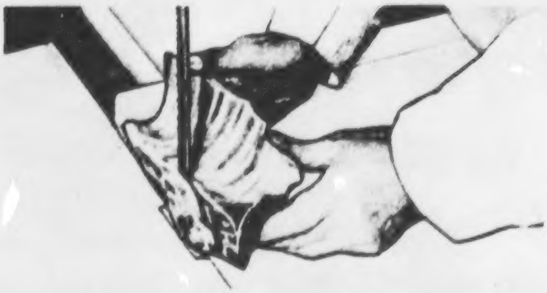

Figure 4-104. Removing chine bone.

Figure 4-104. Next, remove the chine bone from the rib.

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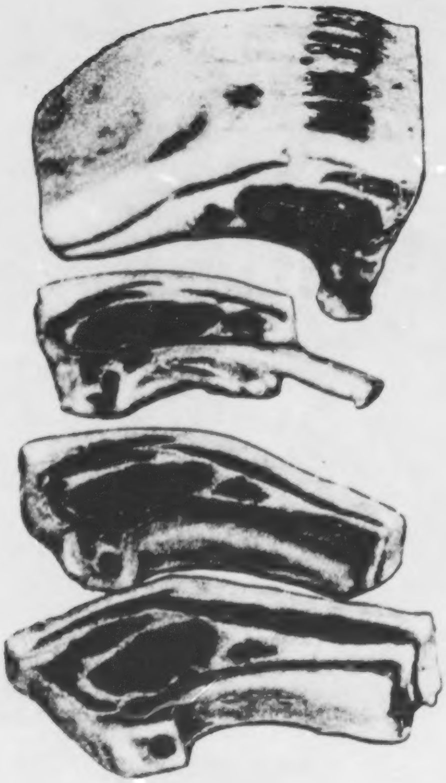

Figure 4-105. Merchandising the rib section.

Figure 4-105. The rib (top of figure) may be merchandised in any of these ways:

a. As french lamb chops (second from top, fig. 4-105). To prepare, cut chops in between each rib and remove the meat and membrane approximately 1 inch from the end of the rib bone.

b. As rib chops (second from bottom and bottom, fig. 4-105). For this, cut chops into the desired thickness and remove excess fat and bone dust. Remove the lamb fell for better eye appeal. Double rib chops may also be processed from the rib section.

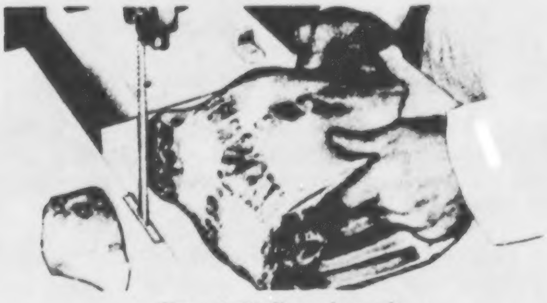

Figure 4-106. Removing neck.

Figure 4-106. Remove the neck, slice it into uniform cuts, and merchandise it as stew or boneless ground lamb.

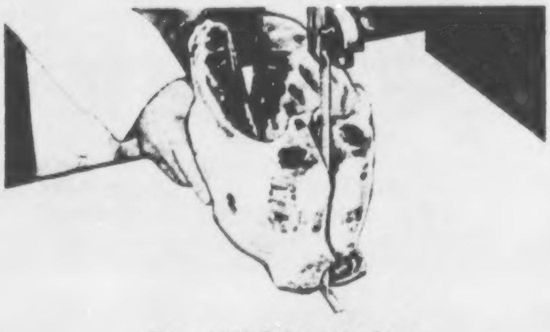

Figure 4-107. Splitting shoulders.

Figure 4-107. Split shoulders through the center of backbone, leaving an equal amount of backbone on each shoulder.

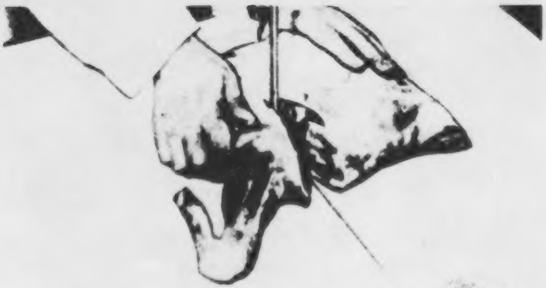

Figure 4-108. Removing shank and breast from shoulder.

Figure 4-108. Remove the shank and brisket from the shoulder; then proceed as follows:

a. Locate the joint where the armbone joins the fore shankbone.

b. Measure 1/2 inch from the joint on the shoulder side and mark.

c. Cut parallel to the back to remove these cuts.

Mock duck is prepared from the top portion of a lamb shoulder. To obtain this, separate the shoulder by removing the top from the rib-and-neck portion. Next, remove meat from around the joint end of the shank, just above the breakjoint, to make the bill and mouth. Remove any surplus fat. Now mold the meat into the desired shape and secure it with small wooden skewers. Sew it up with roast cord, then remove the skewers. Carve the wings on the side. Use half cranberries for eyes and a strip of beef for the tongue. Beef cartilage may be shaped into a fan and used for the tail.

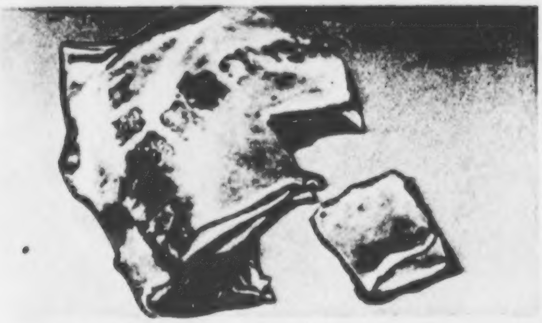

Figure 4-109. Removing two-rib corner from shoulder.

Figure 4-109. To remove the two-rib corner from the shoulder, proceed in this way:

a. Locate the bladebone cartilage, measure 1/2 inch on the shoulder side, and mark.

b. Cut from this mark through the first two ribs, parallel with the back.

c. Cut parallel to and between the rib bones to remove.

d. Process the two-rib corner into stew.

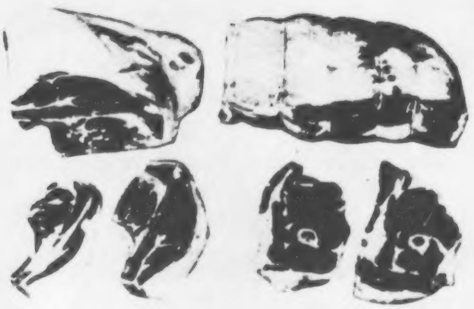

Figure 4-110. Processing and merchandising lamb shoulder.

Figure 4-110. Process the lamb shoulder into these cuts:

a. As shoulder roast, bone-in (top left, fig. 4-110). Cut two or three chops from each side of the shoulder and merchandise the remainder of the shoulder for roast.

b. As blade chops (left and second from left, bottom, fig. 4-110). Trim any fat and remove all bone dust from the chops. Blade chops are identified by the bladebone and the color and texture of the meat.

c. As armbone chops (right and second from right, bottom, fig. 4-110). Trim any excess fat and remove all bone dust from the chops. Armbone chops are identified by the round armbone and the color and texture of the meat.

d. As shoulder roast, boneless (top right, fig. 4-110). To prepare this, cut as follows:

- Remove the shoulder from the rib, back, and neckbones by following the contour of bones.
- Pull the backstrap from the shoulder.
- Open the shoulder from the sides only, cutting meat from the bladebones and the arm-bones.
- Roll and tie this up with roast cord.
- Merchandise boneless roasts in various weights.

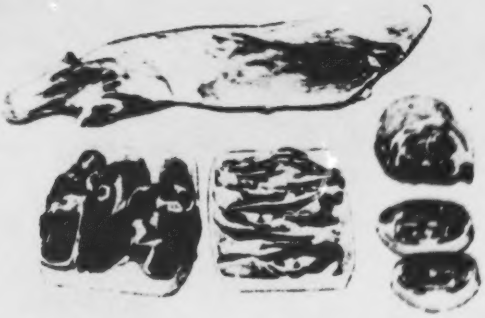

Figure 4-111. Merchandising foreshank, breast, navel, and neck.

Figure 4-111. To process and merchandise the foreshank, breast, navel, and neck (top, fig. 4-111) proceed in this way:

a. Foreshank. For this you must do as follows:

- Remove the lower portion of the shankbone.
- Merchandise the whole for individual forelegs (bottom left, fig. 4-111).
- This may be cut into smaller pieces for stew.
- This may be boned for stew or ground.

b. Breast and navel. These you cut into ribbets by cutting parallel with the rib bone and across the breastbone (center bottom, fig. 4-111), or the breast and navel may be boned for stew or ground.

- Neck. This you slice into uniform cuts for stew (extreme right, fig. 4-111) or bone the neck for stew or ground.

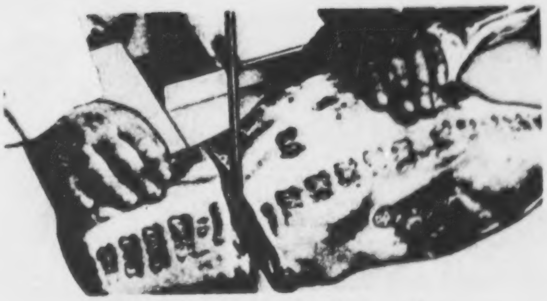

Figure 4-112. Separating loin from leg.

Processing Hindsaddle. To process the hindsaddle, follow figures 4-112 through 4-121.

Figure 4-112. Separate the loin and leg; then proceed in this way:

a. Locate the hipbone.

b. Cut immediately in front of the hipbone on the loin end.

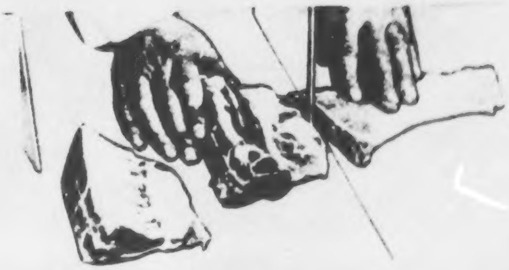

Figure 4-113. Processing loin.

Figure 4-113. To process the loin do as follows:

a. Split the loin, leaving an equal amount of backbone on each side.

b. Measure 4 inches from the chine bone and remove any excess flank by cutting parallel with the backbone.

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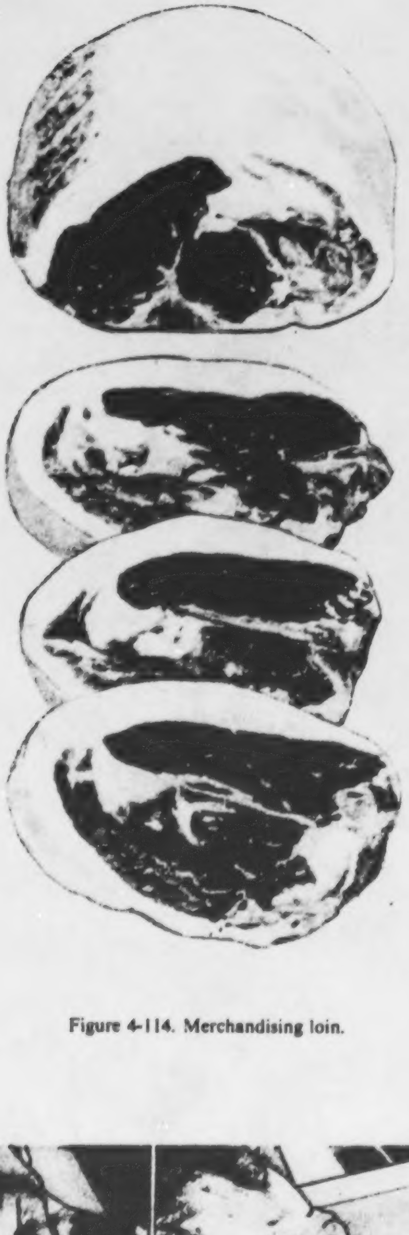

Figure 4-114. Merchandising loin.

Figure 4-114. The loin may be merchandised as roast (top of this figure) or loin chops (bottom 3 of this figure). Loin chops are identified by the T-bone and the color, texture, and size of muscle. Trim any excess fat, remove all bone dust from chops, and merchandise them by varying the number of chops per package.

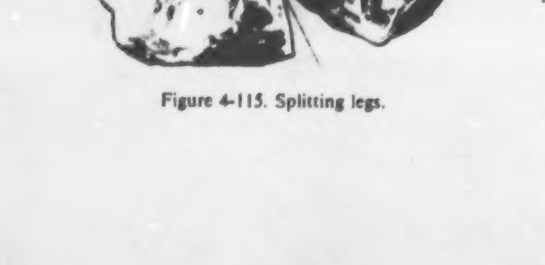

Figure 4-115. Splitting legs.

Processing Legs. To process these split the legs through the center of the backbone, as shown in figure 4-115. Trim the tailbone from the legs, as shown in figure 4-116. Remove the excess fat and flank from the legs, as shown in figure 4-117. Saw off the lower shankbone, approximately 1 inch above the break joint, as shown in figure 4-118.

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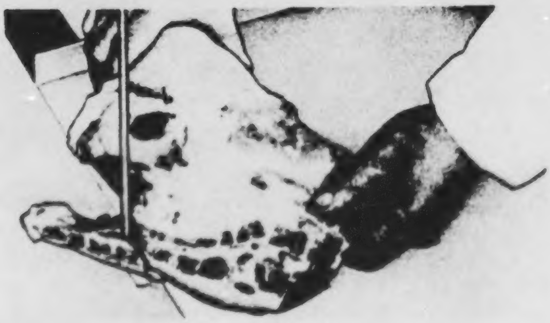


Figure 4-116. Trimming tailbone from legs.

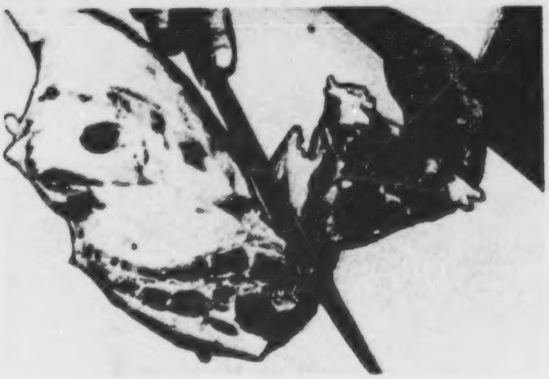


Figure 4-117. Removing excess fat and flank from legs.

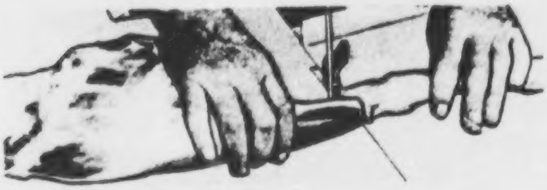


Figure 4-118. Removing lower shankbone.

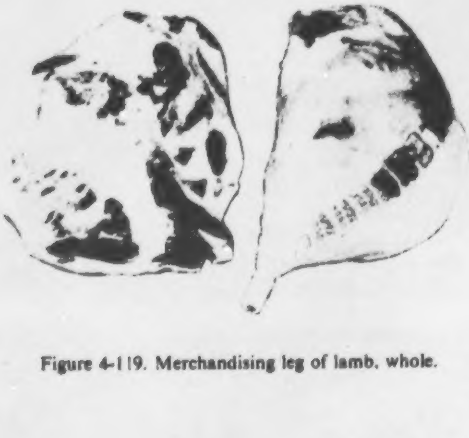


Figure 4-119. Merchandising leg of lamb, whole.

Figure 4-119. Merchandise the whole leg of lamb in these ways:

a. As American leg (left, fig. 4-119). To do this you must:

- Remove the shankbone at the stifle joint, leaving the shank meat attached to the leg.
- Fold the shank meat into the natural seam that is exposed when separating the shankbone and secure the meat into place.
- Saw through the backbone every 1/2 inch to make carving easier.
- Remove any excess fat.

b. As French leg (right, fig. 4-119). To do this you must:

- Remove the meat from the shankbone approximately 2 inches above the break joint and scrape the bone free of meat.
- Saw through the backbone every half inch for easier carving.
- Remove the excess fat.

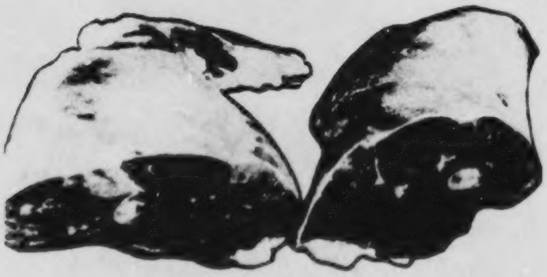


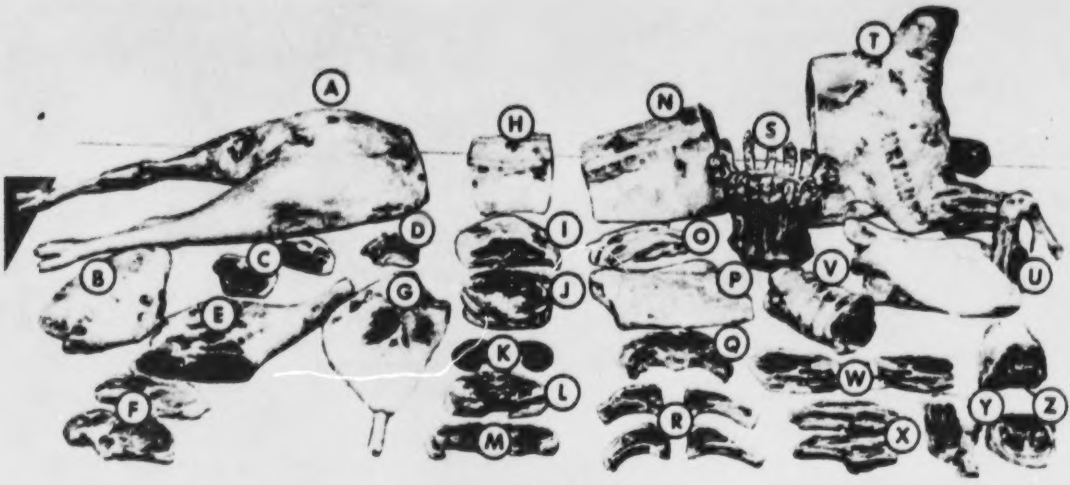
Figure 4-120. Merchandising leg of lamb, halves.

Figure 4-120. The leg may be halved into the following:

a. Leg half (left, fig. 4-120). For this, cut the leg in half by cutting parallel to the aitch bone. It is usually priced higher than sirloin half.

b. Sirloin half (right, fig. 4-120). For this chops may be removed to reduce the size of the leg. Leg may be cut into chops or boned, rolled, and tied for roast.

Cuts Processed From Lamb Carcass. For the retail cuts processed from a lamb carcass study figure 4-121.



A. Saddle (two legs joined together)
B. American leg
C. Leg chops
D. Boneless shank meat
E. Leg with sirloin chops removed
F. Sirloin chops
G. French leg
H. Loin, untrimmed
I. Loin, trimmed
J. Double kidney loin chops
K. Kidneys
L. Double loin chop
M. Loin chop
N. Rib (rack)
O. Riblets
P. Breast
Q. Double rib chops
R. Rib chops
S. Crown roast
T. Triangle
U. Mock duck
V. Boneless shoulder roast
W. Armbone chops
X. Blade chops
Y. Foreshank
Z. Neck and neck slices

Figure 4-121. Cuts processed from carcass of lamb.

Exercises (030):

Indicate whether or not the statements in exercises 1 through 9 reflect lamb processing procedures by placing a T or F, whichever is applicable, in the blanks provided. If a statement is invalid, correct it.

____ 1. Separate the foresaddle from the hindsaddle behind the 13th rib, leaving all ribs on the hindsaddle.

____ 2. Separate the shank from the shoulder between the sixth and seventh ribs.

____ 3. French lamb chops are processed from the loin.

____ 4. The shoulder must be split at the backbone before processing.

____ 5. Mock duck is received from the top portion of a shoulder.

____ 6. Before cutting retail cuts from the shoulder, remove the three-rib corner.

____ 7. Remove the backstrap from the shoulder for boneless roast.

____ 8. To separate loin from the leg, cut immediately behind the hipbone.

____ 9. Lamb legs may be merchandised whole, half, or as sirloin cut into chops.

4-8. Pork Processing.

The wholesale pork items received in the commissaries that must be processed are hams, loins, bacon, and salt pork. We will discuss the processing procedures for each of these in turn, beginning with hams.

031. Given various steps in the processing of hams, identify the weight range of ham for each such step.

We will divide our discussion of hams into (a) those under twelve pounds and (b) those twelve pounds and over.

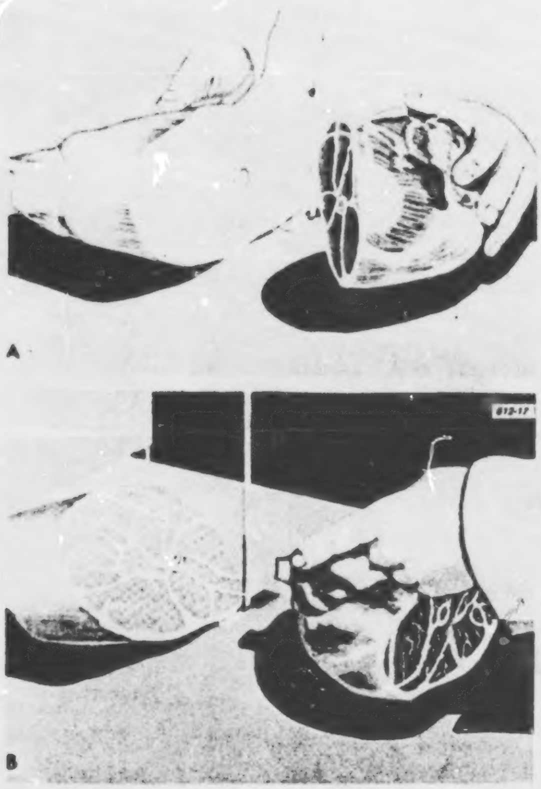


Figure 4-122. Processing ham into halves.

Hams Under Twelve Pounds. Hams weighing twelve pounds and under are sold either as half or a whole hams. Split hams in half, cutting parallel with the aitch bone (fig. 4-122, picture A). Remove the bone tip on the end of the butt portion for better wrapping (fig. 4-122, picture B).

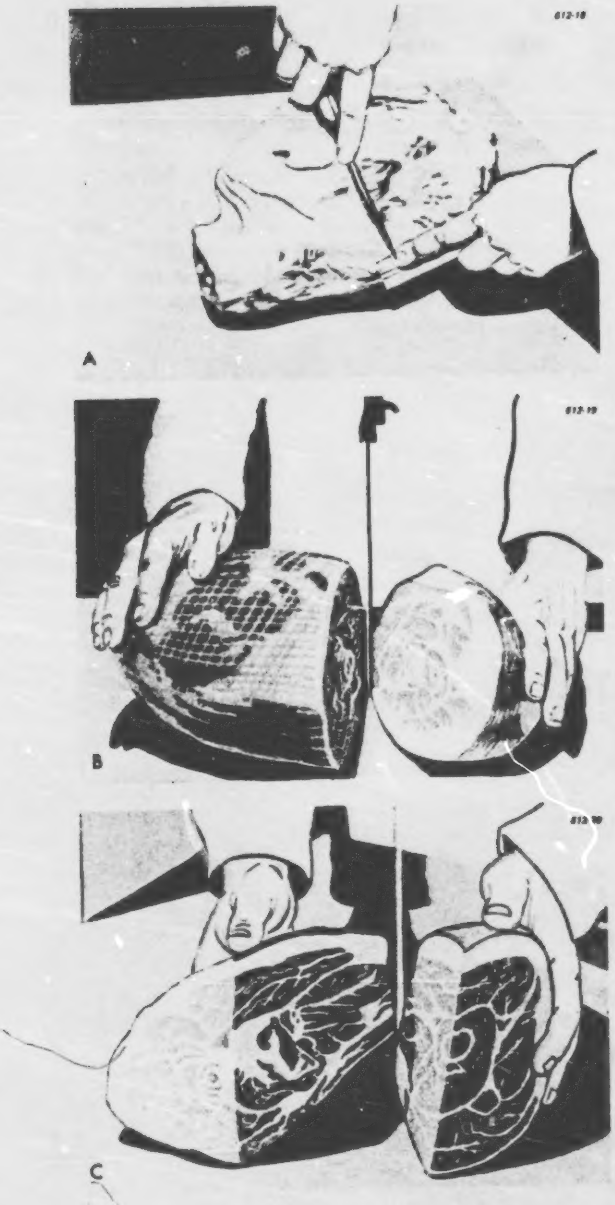


Figure 4-123. Preliminary hams cuts.

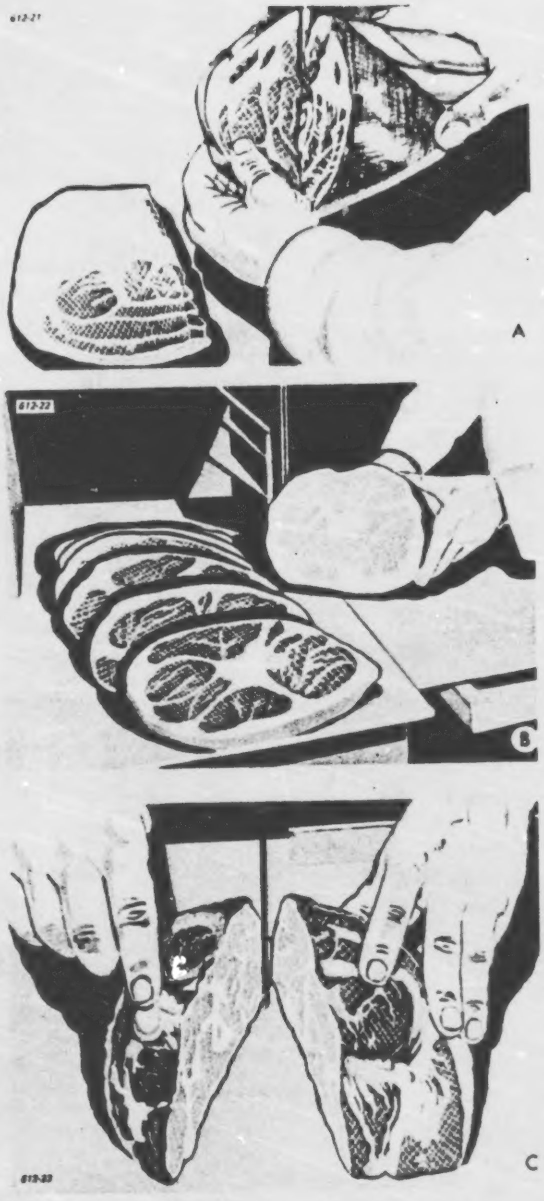


Figure 4-124. Further ham cuts.

Hams Twelve Pounds and Over. Process larger hams into individual cuts. To do this observe figure 4-123 as we proceed. First, pierce the area of the knuckle bone with the knife to locate the edge nearest the center of the ham to remove the shank portion (picture A, fig. 4-123). Remove shank portion at this mark by cutting parallel to the aitch bone (picture B, fig. 4-123). Remove the heel portion from the bone side of the shank (picture C, fig. 4-123). Now refer to figure 4-124. Here, slice the heel portion into breakfast slices, trim off any excess fat, and cut the remainder of hock into seasoning pieces (picture A, fig. 4-124). Cut center slices down to the aitch bone of the butt portion (picture B, fig. 4-124). Center ham slices are the most choice ham cut. Next, place the remaining butt portion face down and remove the aitch bone portion (picture C, fig. 4-124). Cut the aitch bone portion into small seasoning pieces. Cut the cushion portion into breakfast slices (fig. 4-125). For final preparation, trim off any excess fat.

Exercises (031):

For exercises 1 through 5, give the correct size range of ham to which each of the processing steps cited pertains.

____ 1. Sell whole.
____ 2. Remove heel portion.
____ 3. Cut cushion into breakfast slices.
____ 4. Merchandise as half hams.
____ 5. Remove the bone tip on the butt portion for better wrapping.

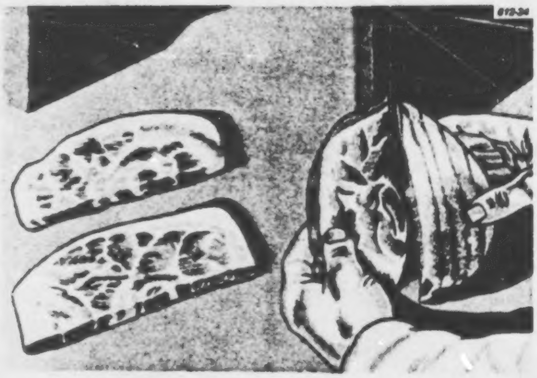


Figure 4-125. Slicing breakfast slices.

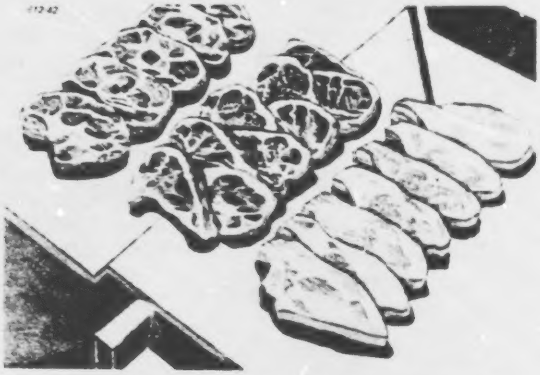


Figure 4-126. Pork chops properly prepared.

032. Supply missing information in a series of statements about pork loin processing.

Pork Loin Processing. Loins may be processed and merchandised in a variety of ways, depending upon customer preference. For example, the entire loin may be processed into chops and merchandised as end cut, center cut, and rib chops. In addition, the loin may be processed to produce roasts and country style ribs along with center cut chops, or, the loin may be boned and merchandised as boneless loin roast and spareribs. First, we will discuss processing the full loin into chops.

Center, end, and rib chops. The size of the pork loin and customer preference governs the thickness of the chops. Loins weighing 8 to 12 pounds are cut into chops 1/2 inch thick, and chops from loins in the 12 to 16 pound weight range are processed 3/8 inch thick. Pork chops for stuffing are cut 1 to 2½ inches thick. In figure 4-126 are shown the properly processed chops. On the left are end-cut; center—center cut; and on the right, rib chops. Center cut chops are the most desirable of the three. Package chops provide a variety for customers (two or more chops per package).

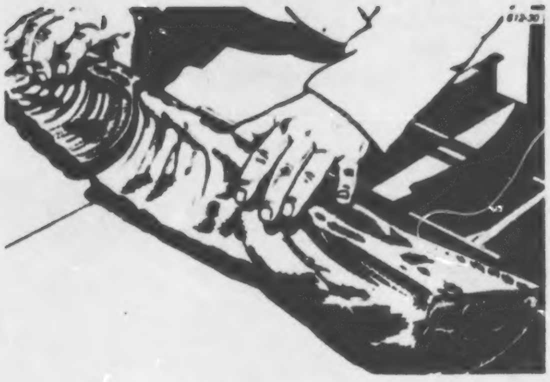


Figure 4-127. Removing rib section.

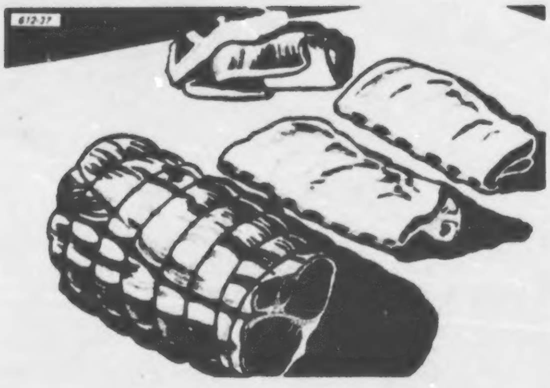


Figure 4-128. Boneless rib roast.

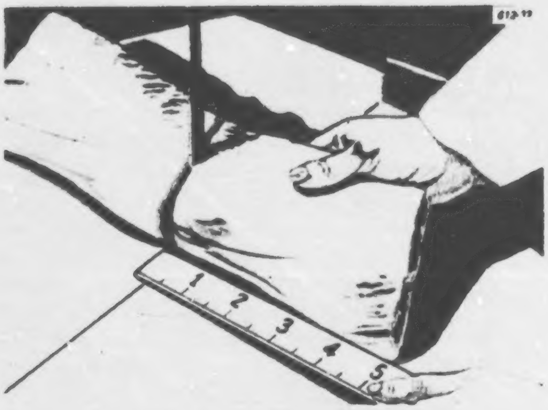


Figure 4-129. Removing loin end.

Roasts and country style ribs. Remove the rib section seven ribs from the rib end of the loin, shown in figure 4-127. To merchandise the rib section as bone-in roast, make a cut approximately halfway down, across, and through the rib bones for easier carving. To prepare boneless rib roast, remove the blade bones and upper layers of fat from two rib ends. Place the two boneless pieces together, fat side out, and tie them. The finished boneless rib roast is shown in figure 4-128. The rib bones are merchandised as backribs.

Remove the loin end 5 inches from the tip of the loin end, as shown in figure 4-129. Saw through the chine and hip bone for easier carving, but do not remove them. (See fig. 4-130.) Merchandise the loin end as sirloin roast.

Country style ribs are prepared by cutting through the length of the rib end diagonally, removing the blade bone. Score between the ribs. The ribs can be seen in figure 4-131.

The remaining center cut portion of the loin may be cut into chops, bone-in roast, or boneless roast. The roasts are prepared by using the same method in preparing rib roast.

Boneless roast and backribs. From this final method of processing loins, you will receive boneless roasts and backribs. Remove the tenderloin from the inside of the loin. Then remove the meat from the bones by following the contour of bones, as seen in figure 4-132. Cut the boneless loin in half to produce two pieces of equal length. Place one piece of boneless pork loin on the preparation table, fat side down, and place the pork tenderloin on the boneless loin lengthwise. Place the second half of the loin on top, fat side up and tie approximately 1 inch apart. Merchandise this loin whole or cut into roasts of various sizes.

To obtain backribs, separate the rib bones from the backbone, as shown in figure 4-133. Merchandise the backribs whole or cut through the ribs at two or three rib intervals for individual servings—this as shown in figure 4-134.

Exercises (032):

Provide the missing word or words in exercises 1 through 5:

1. Cut pork loins weighing 8 to 12 pounds into chops ______________ inches thick.
2. Cut pork loins weighing ____________ to ________ pounds each into chops 3/8 inch thick.
3. Separate the rib section from the pork loin ______ ribs from rib end of the pork loin.
4. Remove the __________ ____________ 5 inches from the end of the loin.
5. When processing bone in rib roast, a cut is made across and through the rib bones to make ______ __________________.

033. List the processing procedures for slab bacon and salt pork.

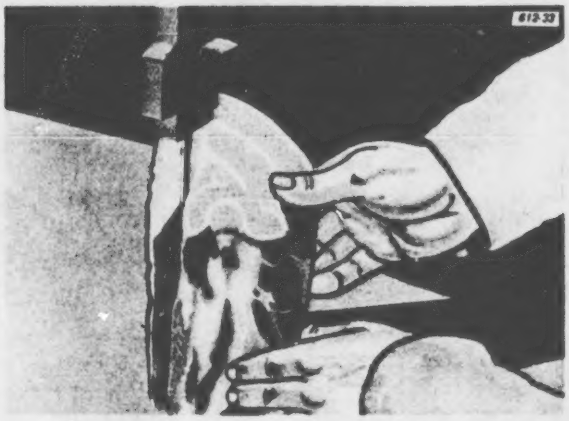


Figure 4-130. Sawing chine bone.

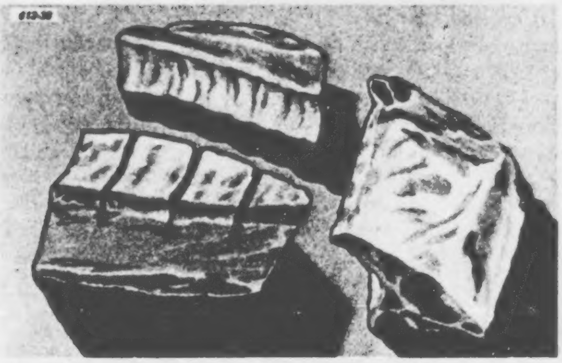


Figure 4-131. Country style ribs.

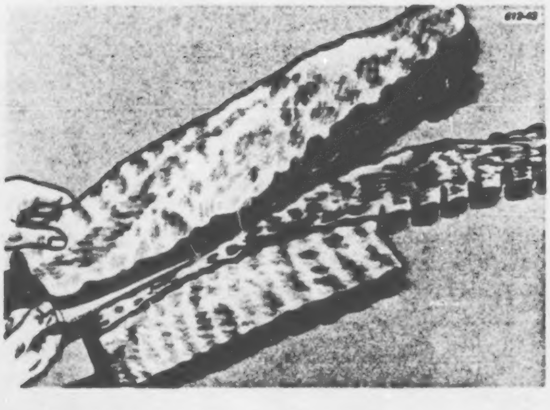


Figure 4-132. Separating ribs and backbone from loin strip.

Slab Bacon. Bacon may be received in the commissary meat department sliced and prepackaged or in slab form. Slab bacon may be cut into one or two pound pieces for display or sliced and displayed in one pound packages.

Salt Pork. Salt pork is obtained from the belly section of a hog. Salt pork may be received prepackaged or in bulk. Bulk salt pork is also processed in pieces or sliced for display. Processed packages of salt pork should not weigh more than 1 pound.

Exercises (033):

1. State the processing procedures for slab bacon and salt pork.

2. Place T for true or F for false beside each of the following statements about salt pork:
   a. Salt pork is obtained from the sides and belly section of a hog.

   b. When it is received, salt pork is either prepackaged or in bulk form.

   c. Once processed, packages of salt pork should never weigh more than 1 pound.

4-9. Barbecuing Meat and Poultry

We are concerned with one last function in the preparation of meats. This function is known as "barbecuing meat and poultry. In sequence we will discuss the following next:

- Equipment required.
- Accountability.
- Code dates.
- Weight range chickens.
- Cooking and holding temperatures.
- Displaying.

034. Distinguish between selected true or false statements concerning barbecuing meat and poultry.

Equipment Required. The necessary miscellaneous accessories for the barbecuing and displaying of items are purchased as commissary operating supplies. These include such items as plastic or foil lined bags, wrap dispensers, pliofilm, basting or cleaning brushes, heat thermometers, sauces, seasoning, cleaners, aerosol silicone, food release, aluminum foil pans, and teflon mitts.

Accountability. Barbecue items are the responsibility of the meat department manager and are accounted for as regular meat items. Therefore, caution

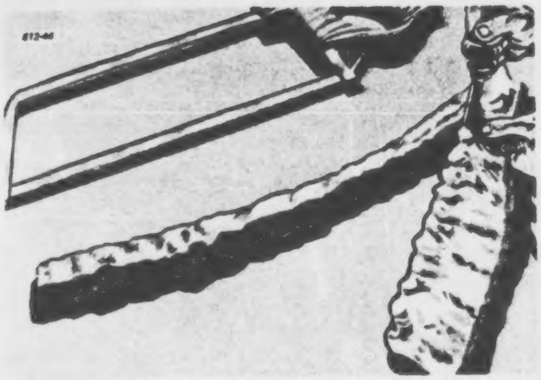


Figure 4-133. Separating rib bones from backbone.

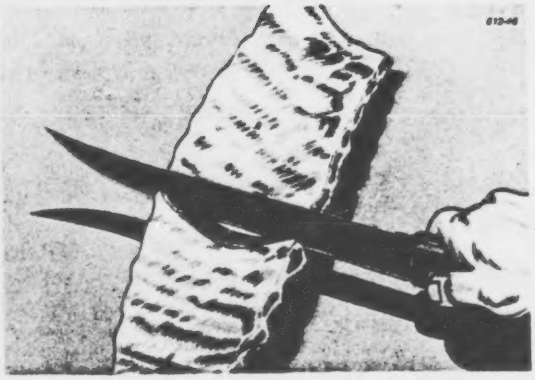


Figure 4-134. Cutting rib section into individual servings.

must be used to assure that raw product costs are fully recovered. Each barbecue item sold stands on its own merit, and losses are not absorbed by other items in the meat department.

Keeping Time of Chickens. Barbecue chickens have a self life of only 2 days. On the second day, they are sold chilled, and after the second day, they are discarded.

Code Dates. All barbecued items are dated or coded to insure freshness. Use different colored ties to identify items packaged each day.

Weight Range of Chickens. Use only chickens within the two to three pound weight range and make certain they are thoroughly cooked.

Cooking and Holding Temperatures. To insure that chickens are cooked thoroughly, a minimum internal temperature of 165° Fahrenheit must be reached. In barbecuing pork, the minimum internal temperature must be 185°. The holding warmer must maintain an internal temperature for barbecued items of at least 150° Fahrenheit.

Displaying. To preclude unsanitary conditions and enhance eye appeal, display barbecued items in see-through bake-and-serve bags.

Exercises (034):

Identify exercises 1 through 6 as either true or false statements by placing a T or F in the blanks provided.

____ 1. Salt and pepper may be purchased as operation supplies for barbecuing items.

____ 2. Losses of barbecued items sold may be absorbed by raising the prices of other meat items.

____ 3. Barbecued items are discarded after the third day.

____ 4. Use different colored ties to identify items packaged each day.

____ 5. Chickens used for barbecuing should weigh between 2 to 4 pounds each.

____ 6. The internal temperature for cooking pork is a minimum of 185°F.

4-10. Salvaging Bones, Fat, and Trimmings

Throughout this chapter, we have referred to boning and trimming. In this section, we will again talk about these tasks and also about bones and fat disposition.

035. Differentiate between a series of correct and incorrect statements concerning procedures to follow in salvaging bones, fat, and trimmings.

Beef Trimmings. Trim all meat from bones before discarding. Meat left on bones results in higher prices for customers. Discard any dark exposed trimmings. Under no circumstances should ground beef be used as a salvage outlet for dark trimmings. Be careful of fat in ground meats. Too much fat in ground meat is not attractive and will result in customer complaints and also a loss to the customer.

Disposition of Bones and Fat. Much of a beef carcass consists of bones and fat. Some bone will be left on retail cuts of meat. We have, however, bones, fat, and dark outside trimmings which are not usable. Accordingly, the meat department must dispose of these items. Your local Defense Property Disposal office will obtain a contract for the sale of bones and fat. They are stored in containers, under refrigeration, until picked up by the contractor. To preclude undesirable odors and spread of germs, the containers must be washed and sanitized frequently. For the same reasons pickups by the contractor are made frequently. Items turned over to the contractor are listed on AF Form 129 (prepared in triplicate). The contractor or his representative signs the forms and retains the third copy. The original and duplicate is forwarded to the voucher and control clerk, who will post quantities on a monthly basis. On each operating-gain-and-loss test, the abstract is subtotaled. The quantities turned over to the contractor are priced, extended, and 90 percent of the value is entered on the inventory as a sale from the meat department.

If a contract for bones and fat is not possible, these items are disposed of by sanitary-fill personnel.

Exercises (035):

Identify each statement in exercises 1 through 5 as true or false by placing a T or F in the blanks provided.

____ 1. Use all trimmings for ground meat or stew.

____ 2. Sanitize containers used for bones and fat frequently.

____ 3. If possible, a contract is made for the sale of bones and fat.

____ 4. AF Form 129 is prepared in duplicate for all bones and fat sold.

____ 5. All of the value of the items released to the contractor is credited to the meat department.

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CHAPTER 5

Wrapping and Pricing Retail Meat Cuts

YOU HAVE LEARNED the methods, principles, and procedures for processing beef, veal, lamb, and pork. Now you are the payoff. Customers like to see meat in neat, clean, and sanitary packages. You must learn proper packaging and display procedures. This is the key and final reason for meat processing. Be as careful in packing and pricing meat items as you are in cutting and preparing them.

You must learn the equipment and supplies that are needed—wrapping film, packaging trays, wrapping machines and stations, scales, and scaling devices. In this chapter, you will find all of the information you need to produce attractive packages.

5-1. Packaging Supplies

The supplies required are clear or styrofilm meat trays and PVC films, rolls only.

036. Identify proper storage of wrapping film, and indicate appropriate size trays and wrapping film needed to tray and wrap selected retail cuts of meat.

Wrapping Film. Figure 5-1 lists the roll size and machine setting, for each size tray, to be used with automatic wrapping machines. Film is a perishable product which requires special storage and handling.

Storage. The following guidelines are used for storage of film:

a. Store film in original containers until ready to use.

b. Do not stack roll stock tubes on end.

c. Do not stack roll stock cartons over 50 inches high.

Conditions for storing film. Ideal conditions for storing film are as follows:

a. Store film in a dry place not subject to extremes of temperature, humidity, and direct sunlight.

b. Relative humidity for storing bulk stock should be from 35 to 50 percent and packages from 50 to 65 percent.

c. Temperatures for storing all types of film should be 65° F to 75° F.

Pliofilm. Pliofilm is an elastic type film and is uncoated. It requires sealing at a temperature as low possible. Because of its elasticity, the amount of rewraps are minimized.

Meat Packaging Trays. Figure 5-2 lists various meat cuts with the appropriate size trays. For instance, tray model 2-S, which is 8 inches long, 5½ inches deep, is used for porterhouse, rib steak, T-bone steak, etc.

Exercises (036):

1. Identify each of the following statements as either true or false.

_____ a. Stock roll stock tubes on end.

_____ b. Relative humidity for storing bulk stock should be from 50 to 65 percent.

_____ c. Temperatures for storing film should not go below 75° F.

2. Using figures 5-1 and 5-2 as necessary indicate the appropriate size tray and film needed to tray and wrap each of the meat cuts listed below.

Meat Cuts	*Tray Size*	*Film Size*
a. Top round steak	_____	_____
b. Chuck roast	_____	_____
c. Rib steak	_____	_____
d. Tripe	_____	_____
e. Chop Suey	_____	_____

5-2. Wrapping, Pricing, and Displaying

In this section, we will talk about wrapping and scaling systems used in meat departments. We will also discuss proper display and rotation methods that enhance sales of retail cuts.

037. Identify various packaging procedures and associate selected characteristics with their related, appropriate type of scaling system.

Packaging Merchandise. To package meats properly, definite procedures, equipment, and training are required. It cannot be overemphasized how essential proper wrapping is to the patron. Proper tightly sealed packages enhance bloom and cause the product to

Model No.		Roll size	Machine setting (length of product in inches)
a. Trays:			
1	Flat package	11	11
	Roast or bulk package	12	12
1½	Flat package	11	11
	Full pack or large item	12	12
2	Flat package, full pack or shingled	14	14
3	Flat package	16	16
2–S	Flat package	12	12
	Bulging pack	14	14
4–S	Flat package	14	14
	Bulging pack	16	16
8–S	Flat package	16	16
	Full pack ⅝" thick item	18	18
10–S	Flat package	14	14
	Over ⅝" thick item	16	16
12–S	Flat package ⅝" thick item	18	18
15–S	Flat package	11	11
17–S	Flat package	12	12

Figure 5-1. Film roll size and machine setting for cut.

Model No.	L		W (in inches)		D	Usage
Trays:						
1	5	x	5	x	1	Chop Suey, Ground Beef, Kidney, Bulk Sausage, Ham for Seasoning, Pork Hocks, Small Roast.
1½	8	x	3½	x	1	Short Ribs, Tongues, Pork Hearts, Whole Fryers, Chicken Wings, Beef Stew.
2	8	x	5½	x	1	Ground Beef, Beef Hearts, Tripe, Pork Feet, Chicken Necks and Backs, Chicken Breasts, Cut Up Fryers, Chicken Legs and Thighs.
3	10	x	8	x	1	Heavy Roasts.
2–S	8	x	5½	x	⅝	Club Steak, Porterhouse, Rib Steak, T-Bone Steak, Cube Steak, Rump Roast, Boneless Chuck Roast, Lamb Chops, Veal Chops, Veal Steak, Veal Roast, Pork Chops, Spare Ribs, Pork Roast, Rolled Pork Roast, Pork Steak, Sirloin Tip Steak, Sirloin Tip Roast.
4–S	9	x	7	x	⅝	Chuck Roast, Corned Beef, Round Bone, Pork Steak, Boneless Chuck Roast, Porterhouse, Rib Steak, Chuck Steak, Sirloin Tip Roast.
8–S	9⅝	x	7⅝	x	⅝	Chuck Roast, Round Bone, Pot Roast, Full Cut Round Steak, Sirloin Steak, Full Cut Swiss Steak, Chuck Steak.
10–S	10½	x	5½	x	⅝	Bottom Round Steak, Top Round Steak, Pinbone Sirloin Steak, Flank Steak.
12–S	10⅝	x	8⅝	x	⅝	Full Cut Large Round Steak, Full Cut Large Swiss Steak, Sirloin Steak, Bone In, Whole Veal Breast.
15–S	5⅝	x	4⅝	x	½	Formed Ground Beef, Sliced Luncheon Meats, and Boiled Ham.
17–S	8	x	4	x	⅝	Short Ribs, Center Cut Beef Shank, Veal and Lamb Patties, Lamb Loin Chops.

Figure 5-2. Meat packaging trays.

appear more attractive and palatable. Improper wrapped packages are passed over and remain in the case. When cuts of meats have lost their bloom and eye appeal, convert them to other products through reprocessing.

Principles. Packaged meats must represent accurately the quality of the contents of the package. Keep the following principles in mind in the packaging of meats:

a. Select packaging supplies which are economical in cost, compatible with the equipment, and which require little manpower.

b. Select packaging material that protects the meat and enhances its appearance until it is prepared for consumption.

c. Cut and trim all meat, so that there are a minimum of exposed bones that may break the package.

d. Tailor packaging to the cut of meat.

Automatic wrapping and pricing. A completely automatic wrapping system consists of a wrapping machine with a built-in shrink tunnel, a conveyor, an automatic weighing and computing scale, and a labeler. No initial overwrap by the operator is required. The wrapping machine accepts trays within a given range of sizes. Most machines are available with multiple film arbors. The size film required is selected by turning a control to draw film from the arbor desired.

Handwrap (automatic weighing and labeling). This system consists of a handwrap station connected by conveyer to a shrink tunnel and an automatic scale and labeler, as shown in figure 5-3. Handwrap stations also have multiple film arbors that hold rolls of film of various sizes. The weighing and computing scale and labeler is fully automatic and operates in the same manner as with the automatic wrapping system.

Handwrap stations. Handwrap stations, as shown is figure 5-4, may be either of console type (A) or of the tabletop type (B). The station has suspended rolls of film, a hot wire cutoff, and a built in hotplate for sealing packages. The station may be used with either the automatic, semiautomatic or manual scaling system.

Scaling Systems. Scales are checked for accuracy, leveled, and adjusted before each day's operation. Those that require maintenance are not used. Signs are posted on those needing maintenance or not weighing correctly. It is the manager's responsibility to insure that all scales are in proper order and adjusted to zero balance. He inspects packages at random to insure correct weight and prices. Prior to weighing and wrapping meat items, make certain scales are properly calibrated to allow for weight of the packaging materials used. Three scaling systems are authorized: (1) automatic, (2) semiautomatic, and (3) manual systems. We discuss these next in the order named.

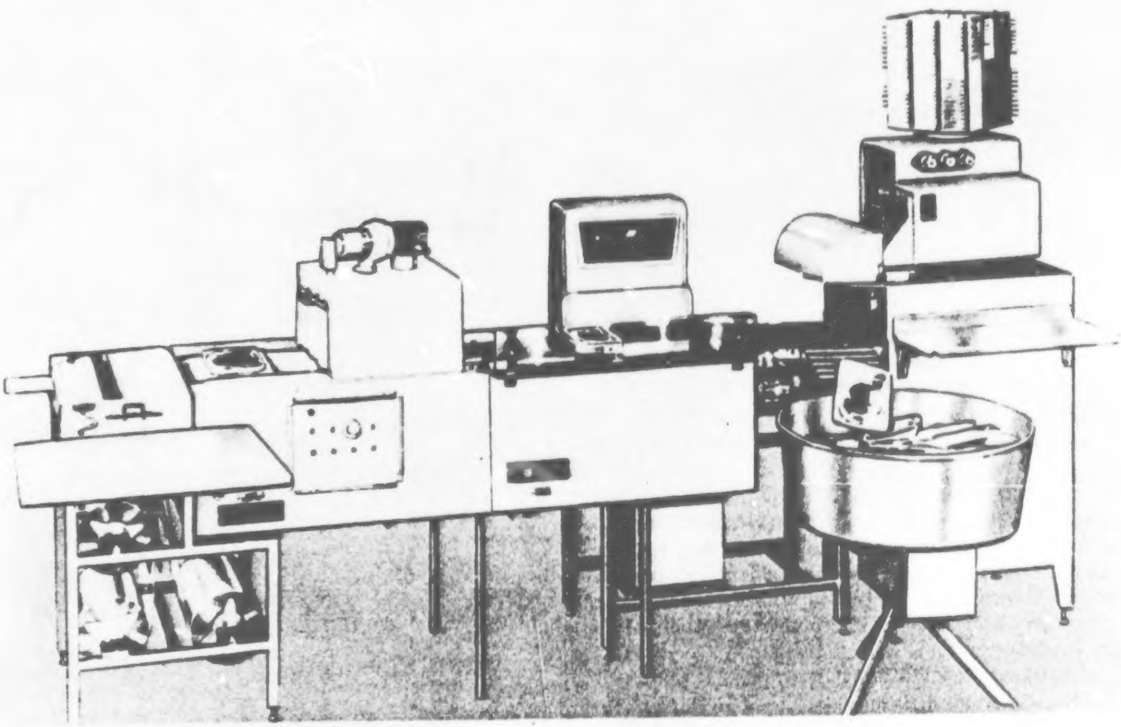
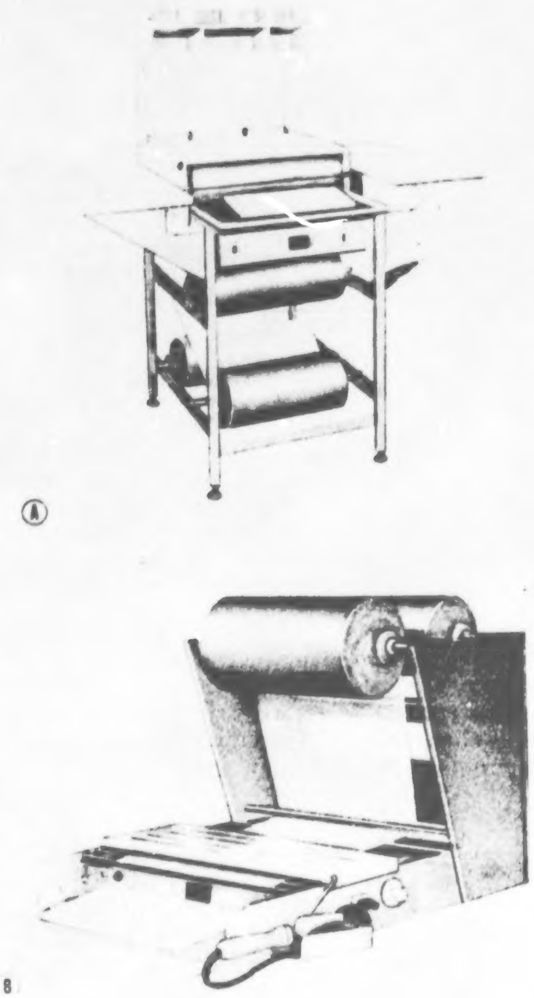


Figure 5-3. Handwrap station connected by conveyor to shrink tunnel, automatic scale, and labeler.



A. Console-type
B. Tabletop station

Figure 5-4. Handwrapping stations.

Automatic systems. One system consists of three components: the scale, the label producer, and the label activator. After a slug indicating the name of the item is inserted and price dials are set, the system automatically weighs, computes, and issues a label. If the system is connected to the automatic wrapping and pricing machine, the scale will automatically place the label on each package. If used in conjunction with handwrap stations, the package of meat is manually placed on the label activator containing the label which results in the label affixed to outside of the package.

The other automatic system contains the entire system for weighing, computing, and labeling in one compact housing. The actions of both systems are similar and obtain the same results.

Semiautomatic system. This system also consists of three components: a scale with a keyboard attachment, a label printer which is electrically interlocked with the keyboard to operate as a unit, and a label activator. The keyboard is used to indicate the price per pound.

Manual system. This system likewise consists of three components: prepack scale, label printer, and label activator. The scale contains a dial which the operator uses to set the price per pound. When a package is placed on the scale it weighs and computes the total price of the package. The operator is required to insert a name plate slug into the label printer, so that the name of the item will appear on the printed label. The label printer has a keyboard which the operator uses to manually transpose information (weight and total price) produced by the scale. The label is then manually placed on the third component, the label activator.

Maintenance. Periodic maintenance is performed on wrapping machines a minimum of twice annually. The manufactures calibrate and verify the accuracy of the scales and tag them to reflect this calibration.

Exercises (037):

1. Match each wrapping system given in column B with its related appropriate characteristics, found in column A, by writing each numbered system (column B) beside its corresponding lettered characteristics (column A). NOTE: Each item in column B may be used more than once.

Column A *Characteristics*	*Column B* *Wrapping Systems*
____ a. Consists of a built-in shrink tunnel, conveyer, and automatic scale.	1. Automatic machines.
____ b. Multiple film arbors.	2. Handwrap stations.
____ c. Console or tabletop type.	
____ d. Consists of suspended rolls of film, hot wire cutoff, and built-in hotplate.	

2. Why is proper packaging so important?

3. Match each characteristic given in column B with its related, appropriate type of scaling equipment, found in column A, by writing each numbered characteristic (column B) beside its corresponding lettered equipment (column A). NOTE: Each item in column B may be used only once.

Column A *Scaling Equipment*	*Column B* *Characteristics*
____ a. Automatic scale.	1. Weight and total price manually transposed on keyboard.
____ b. Semiautomatic scale.	2. The keyboard is used to set the prices per pound.
____ c. Automatic scale in compact form.	3. Housing contains weighing, computing, and labeling equipment as one unit.
____ d. Manual scale.	4. Prepack scale.
	5. Automatically weighs, computes, prints, and issues a label.

038. Associate selected items of display efficiency with related proper elements of display, and relate the procedures for rotation of meats.

Display and Rotation. We now come to the final, and one of the most important processing steps, the displaying of meat items. We will talk here about some of the most desirable display techniques. We will also discuss the importance in rotation of meat items.

Display layout. The most efficient display layout is one in which you can place meat into the display case from behind. The processing area, if possible, should be directly behind the display cases. Otherwise, it takes more time and effort to reload the case and also distracts customers. There should be room directly under display cases for temporary storage of meat so cases can be quickly refilled. A pan dolly rack, or similar aid, is used to move meat from the scale to the display case.

Signs for meat displays are not hand printed, but made with black lettering on a sign making machine. Neat signs add to the attractiveness of your display. Commercial signs are available in a wide variety and should be used whenever possible.

Display arrangements. You will find display cases stocked in one of two ways: (1) grouped by type of meat (beef, veal, lamb, pork, etc.) or (2) grouped by method of cooking (roasts, broiling meats, and braising meats). A key display feature is to keep the entire bottom of the case filled at all times (the customer likes to feel that he has a wide selection). During slack periods, a single layer is usually enough, but during busy periods items may be stacked two or three layers deep. It is best to arrange items by types—all beef together, all pork together, etc. This arrangement aids customers in identifying meats. They are accustomed to seeing beef in a certain section of the case. Then, too, meats such as beef and pork contrast in color. Keep contrasts down by using the type-of-meat grouping plan. If it is necessary to relocate a certain cut of meat, use appropriate signs to direct the shopper to the new location.

Display lighting. Good lighting helps the customer to read signs, labels, and prices, and makes the case more attractive. What color should the lighting be? When only fluorescent light is used, the soft white-natural is preferred, because its peakness tends to make up partly for the lack of incandescent sparkle. When fluorescent light is used in combination with incandescent, deluxe cool white is preferred.

Rotation of meat. In the delicatessen display case, place tray meats in a manner that the oldest cuts are nearest the clerk and toward the rear display case. In the self-service display case, the reverse is true. This will provide for proper rotation of processed articles. In meat departments with multiple deck display cases, use top portion of the display for smoked meats and sausage items. All meat items are code dated to assure that the *freshest* meat is always available to the customer.

Exercises (038):

1. Match each proper element of display, given in column B, with its related appropriate items of display efficiency, found in column A, by writing each numbered display element (column B) beside its corresponding lettered item of display efficiency (column A). NOTE: Some of the elements of display in column B may not be used at all.

Column A *Display Efficiency Items*	*Column B* *Elements of Display*
____ a. Most efficient display layout.	1. Soft white-natural.
____ b. Most desirable meat display arrangement.	2. Temporary storage display case.
____ c. Most desirable display lighting.	3. By method of cooking.
	4. Case loads from front.
	5. By type of meat.
	6. Case loads from behind.

2. State the proper procedure for rotation of processed meats in self-service type display cases.

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CHAPTER 6

Meat Department Management

FROM THIS CHAPTER you will learn effective techniques for management of a commissary meat department. The four general areas we will cover are: (1) equipment, (2) planning and scheduling, (3) inspections and evaluation, and (4) tests and pricing procedures.

6-1. Equipment

In this section, we will discuss the categories of equipment and operating supplies authorized in the meat department. We will also examine how to determine the quantity of equipment that is authorized and, last but not least, how equipment and operating supplies are controlled.

039. Identify by category the types of equipment and state selected operating supplies authorized and the fund used for purchasing them in the commissary meat department.

Category I Equipment. Category I equipment consists of major items of equipment, such as display cases, automatic wrapping machines, grinders, and bandsaws. Contracts for maintenance and repair of this type of equipment may also be authorized. The contracts may cover such services as replacement of saw blades, sharpening and replacement of knives and plates for grinders, and maintenance and inspection of scales. The quantity of category I equipment that may be purchased is based on the classification of the store, which is based on the average monthly sales for the latest 3-month period. Only the actual quantity of equipment that can be used efficiently should be procured. This type of equipment is normally obtained by local procurement.

Category II Equipment. Category II equipment consists of miscellaneous items, such as pans and meat wrapping stations. The commissary may requisition this type of equipment from base supply on a reimbursable basis, obtain it directly from the General Services Administration (GSA), or purchase it locally. The commissary officer is responsible for determining the quantity of each item purchased.

Operating Supplies. Items with a unit cost of less than $500.00 that are required for the operation of the store may be obtained as operating supplies. These items consist of such items as handtools, cleaning supplies, knives and plates for grinders, packaging trays, and wrapping films. Operating supplies may be obtained from base supply on a reimbursable basis or directly from the GSA.

Funds for Purchase. Unless otherwise indicated or limited, all items of categories I and II equipment and operating supplies are purchased with the surcharge revolving fund. This includes the cost of equipment, certain installation cost, and the cost of maintenance.

Exercises (039):

1. Identify each of the following items as belonging to either category I equipment or to category II equipment by placing I or II in the appropriate blanks.

____________ a. Meat grinder.
____________ b. Bandsaw.
____________ c. Wrapping station.
____________ d. Display case.
____________ e. Pans and racks.

2. State the requirement of category I equipment items.

3. What individual is responsible for determining the quantity of category II equipment items to purchase?

4. List four items that may be procured as operating supplies.

5. What fund is used to purchase equipment and operating supplies?

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040. Distinguish among true and false selected statements concerning the control of equipment and supplies.

Controlling Equipment. Final accounting for equipment and supplies is the responsibility of the commissary officer. But he must have help from the store manager and the meat department manager to make the system work. To this end everyone in the store msut be careful to turn in required forms that reflect the actual supply and equipment on hand. An inventory of all types of equipment is taken at least annually and when there is a change in commissary officers. A record of this equipment is maintained and is subject to audit.

Controlling Operating Supplies. All department managers have the responsibility of insuring good supply discipline. An operating level should be established for each item, normally not to exceed 30 days consumption on CONUS. Since more surcharge funds are used for operating supplies than for any other authorized category, good supply discipline must be exercised in establishing levels in procuring, storing, and consuming supplies. The objective is to have sufficient quantities on hand while at the same time avoiding overstockage and waste. Operating supplies are inventoried monthly.

Exercises (040):
Identify the statements in exercises 1 through 4 as either true or false, changing invalid ones so that they are true.

_____ 1. An inventory of all types of equipment is taken at least annually.

_____ 2. A record of equipment on hand is maintained and is not subject to audit.

_____ 3. Operating levels of supplies normally should not exceed 60 days.

_____ 4. More surcharge funds are used for operating supplies than for any other authorized category.

6-2. Planning and Scheduling

One of the supervisor's major duties is that of planning and scheduling, which involves organization and staffing, meat items authorized, daily assortment of items for sale, and meat purchases.

041. Differentiate among a series of correct and incorrect statements pertaining to organization and staffing.

Organization. The Air Force Commissary Service (AFCOMS) is a component of the Air Force Engineering and Services Agency (AFESA). The commander of AFCOMS has command jurisdiction over assigned personnel, facilities, property, and funds through four subordinate geographical region commanders. The regions, designated the Western, Central, Eastern, and European regions, exercise operational control over the commissaries within their respective geographical areas.

Complexes. Each region may have one or more commissary complexes within the geographical area. If a complex is formed, all functions above the store operations level are consolidated in the complex office. The commissary complex officer is responsible to the region commander for the operation of all satellite stores assigned to the complex. The satellite store manager is responsible to the commissary complex officer for operation of the store.

Commissary (single). The commissary officer is responsible to the region commander. The store manager provides overall guidance for operation of all three subdepartments (grocery, meat, and produce) and is responsible to the commissary officer. The meat department manager is responsible to the store manager for an efficient meat department operation.

Staffing. Authorizations for staffing are contained in AFM 26-3, *Air Force Manpower Standards.* This manual provides personnel authorization guidelines for each work center (commissary) on the basis of average monthly sales volume for the commissary store. The actual number of personnel at a particular store is determined by manpower authorities operating under Air Force directives, on recommendation and advice of the commissary officer. All department managers have the responsibility of keeping the commissary officer informed of additional manpower authorizations that may be needed.

Exercises (041):
Identify exercise statements 1 through 4 as true or false:

_____ 1. There are three geographical regions under AFCOMS.

_____ 2. There may be one or more commissary complexes under each region.

_____ 3. The store manager provides overall guidance to all sections within the commissary store.

_____ 4. Manpower authorizations are based on the average weekly sales volume of the commissary store.

042. Cite selected meat or meat product items authorized to be stocked and sold in the meat department and specify certain meat tenderizing processes and how to display meat items in the delicatessen.

Meat and Poultry. Refer to figures 6-1 and 6-2 for meat items authorized in the meat department. To avoid confusion in the location of certain items, grocery items are also listed. Whenever the possibility of cashier confusion exists regarding the proper department for recording of a sale, distinctive labels or markings are used for clarification. Note then that the items indicated to the extreme right of figures 6-1 and 6-2 are the only meat items authorized to be stocked and sold in the meat department.

Pretenderized beef. Your commissary may also sell pretenderized beef. This is beef that has been injected with a tenderized substance before the animal is slaughtered. The tenderizing action takes place when the meat reaches a certain temperature while cooking. The three types of processes used for this tenderizing, are: (1) papain-papaya, (2) bromelin-pine-apple, and 93) ficin-figs. When this type of beef is sold, display signs are used advising patrons that the meat has undergone a tenderizing process and, if known, the required cooking temperature at which the tenderizing action takes place. On the label of each retail cut, the name of the tenderizing process is listed. The purchase of name brand tenderized beef is not authorized. On orders to DPSC, the meat department must stipulate the type of tenderizing process desired.

Fresh fish. Prepackaged fresh fruit is authorized to be stocked and sold under the following guidelines:

a. Procure fresh fish only from approved sources. Insure that these products are inspected in accordance with AFR 163-2, *Veterinary Food Inspection*, and that procedures comply with applicable portions of AFR 163-8, *Control of Foodborne Disease*.

b. See that all fish have arrived at the commissary within 24 hours after being processed.

c. Do not accept previously frozen fish, and reject items which do not arrive at the proper temperature.

d. Keep fish at a temperature of 34° F, or lower; but do not allow them to freeze.

e. Do not commingle fish products with meat products.

f. Realize that meat department personnel will not perform steaking, filleting, packaging, or other processing of fish products.

g. Destroy fresh fish products 48 hours after receipt.

Delicatessen. A delicatessen section, on a clerk service basis, is authorized as a part of the meat department. In this "deli" a variety of ready-to-eat meats or meat products and cheeses are provided. Note, too, that these items are not prepackaged but rather displayed in bulk.

Exercises (042):

1. Identify each of the following meat or meat products as being either located in either the grocery department or the meat department.

_____ a. Bacon, smoked, sliced-prepackaged, frozen.
_____ b. Beef, boneless, chilled.
_____ c. Beef liver.
_____ d. Shortening, all types, bulk.
_____ e. Fish, salted, smoked or dried (not canned).

2. List the three types of tenderizing processes used in pretenderized beef.

3. Complete the following: Fresh fish must arrive at the commissary __________ hours after packaging.

4. How should meat items be displayed in a delicatessen section of the meat department?

043. Provide selected factors involved in deciding the amounts and types of meat to place on sale and distinguish true from false statements about the amounts and meat types.

Amount. In deciding how much meat to display, use the main guide you have from past sales. By reviewing past sales, you can almost predict the amount of sales on any given day of the week or month. Naturally, the space available for display must also be considered.

Types of Meat. Factors to consider in deciding the types of meat to purchase and display are consumption data, customer preference, religious custom, holidays, season, and availability of the product. Only the highest quality meat items consistent with price and customer acceptance should be purchased and sold.

Exercises (043):

1. State the factors to consider when deciding the amounts and types of meat to be placed on sale.

2. Beside each of the following statements write T for true or F for false:

_____ a. The second most important consideration in determining the amount of meat to display is the space available for such display.
_____ b. By reviewing past sales, you can almost predict the amount of sales on any given day of the week or month.
_____ c. Only the highest quality meat items should be purchased and sold.
_____ d. Consistent with customer acceptance and price, nothing but the highest quality meat items must be purchased and sold.

ARTICLES	GROCERY SUBSECTION	MEAT DEPARTMENT SUBSECTION
DAIRY PRODUCTS		
Cheese, bulk, all types—cut and packaged in meat department		X
MEAT AND MEAT PRODUCTS		
Bacon, Canadian, bulk		X
Bacon, Canadian, prepackaged	X1	X2
Bacon, smoked, slab		X
Bacon, smoked, sliced, prepackaged	X1	X2
Ham, cooked—canned or otherwise requiring refrigeration		X
Ham, smoked, whole		X
Ham, smoked, processed		X
BEEF AND BEEF PRODUCTS		
Brains		X
Boneless, chilled or frozen		X
Corned—not canned		X
Dried, sliced—bulk		X
Hearts		X
Kidneys		X
Liver, beef		X
Liver, calf		X
Oxtails		X
Sweetbreads		X
Tenderloin		X
Tongue, fresh or smoked (not canned)		X
Tripe, bulk		X
Wholesale cuts		X
LAMB		
Carcass and wholesale market cuts		X
PORK		
Bellies, dry, salt cured		X
Boneless, smoked butts		X
Boston butts		X
Fatbacks, dry, salt cured		X
Hams, fresh		X
Loins, bone in or partially boned		X
Shoulders, fresh or smoked, including picnic style		X
Spareribs, half sheet		X
VEAL		
Sides, and/or wholesale cuts		X

Legend: 1. Frozen—prepackaged
2. Chilled

Figure 6-1. Location of meat and poultry items.

ARTICLES	GROCERY SUBSECTION	MEAT DEPARTMENT SUBSECTION
SHORTENING		
All types—packers' prepackaged	X	
All types—bulk		X
MEAT AND MEAT PRODUCTS (MISCELLANEOUS)		
Chili con carne (not canned)	X1	X2
Headcheese—any packaging requiring refrigeration	X1	X2
Froglegs	X1	X2
Luncheon meat—requiring refrigeration	X1	X2
Meatloaf, assorted	X1	X2
Rabbit—dressed, domestic	X1	X2
Sausage, bologna		X
Sausage, cervelat, dry or soft		X
Sausage, frankfurters		X
Sausage, liver		X
Sausage, pork, bulk or links		X
Sausage, salami		X
Sausage, scrapple		X
Sausage, other		X
Sausage, all types, frozen, prepackaged	X	
POULTRY		
Chicken, dressed, eviscerated:		
Fowl: fryers, roasters, broilers	X1	X2
Chicken, ready to cook:		
Broilers, capons, fowl, roasters	X1	X2
Packers, prepackaged—whole or parts	X1	X2
Ducks and geese—dressed, eviscerated	X1	X2
Turkey—dressed, eviscerated	X1	X2
Eggs, fresh	X	
WATER FOODS		
Fish:		
Frozen, prepackaged or bulk	X	
Salted, smoked or dried (not canned)		X
Shellfish—fresh or frozen	X1	X2
OTHER		
Meat pies	X	
Meat dinners	X	
Portion pack (brand-name steaks, chops, patties, etc.)	X1	X2

Legend: 1. Frozen—prepackaged
2. Chilled

Figure 6-2. Location of meat and poultry items—continued.

044. Cite selected factors that may affect meat purchases and differentiate between correct and incorrect statements about these same factors.

Past Purchases. By carefully reviewing past records, you can easily determine the amount of beef, pork, and lamb purchased in the past. This information is of great value in determining present and future requirements.

Changes in Base Mission. If the mission of a base changed, the number of base personnel may also change. Meat purchases are then adjusted accordingly.

Performance Standards. Job performance is based on pounds of merchandise handled per hour and quality of processing. When establishing standards of performance, skills of the meatcutters should be considered (experienced meatcutters will produce more than apprentices with limited experience).

From the above information, you can understand how performance standards can also affect meat purchases.

Exercises (044):

1. **State the factors that help determine meat purchases.**

2. Write T for true or F for false beside each of the following statements:

_____ a. To determine the amount of beef, pork, and lamb purchased in the past, review carefully past records.

_____ b. It is on the pounds of merchandise handled per hour that job performance is based.

_____ c. Meat purchases must be adjusted if the mission of a base is changed, bringing with it resultant changes in the number of base personnel needed.

_____ d. Both the quality of processing and the pounds of merchandise handled per hour serve as bases for job performance.

6-3. Tests and Pricing Procedures

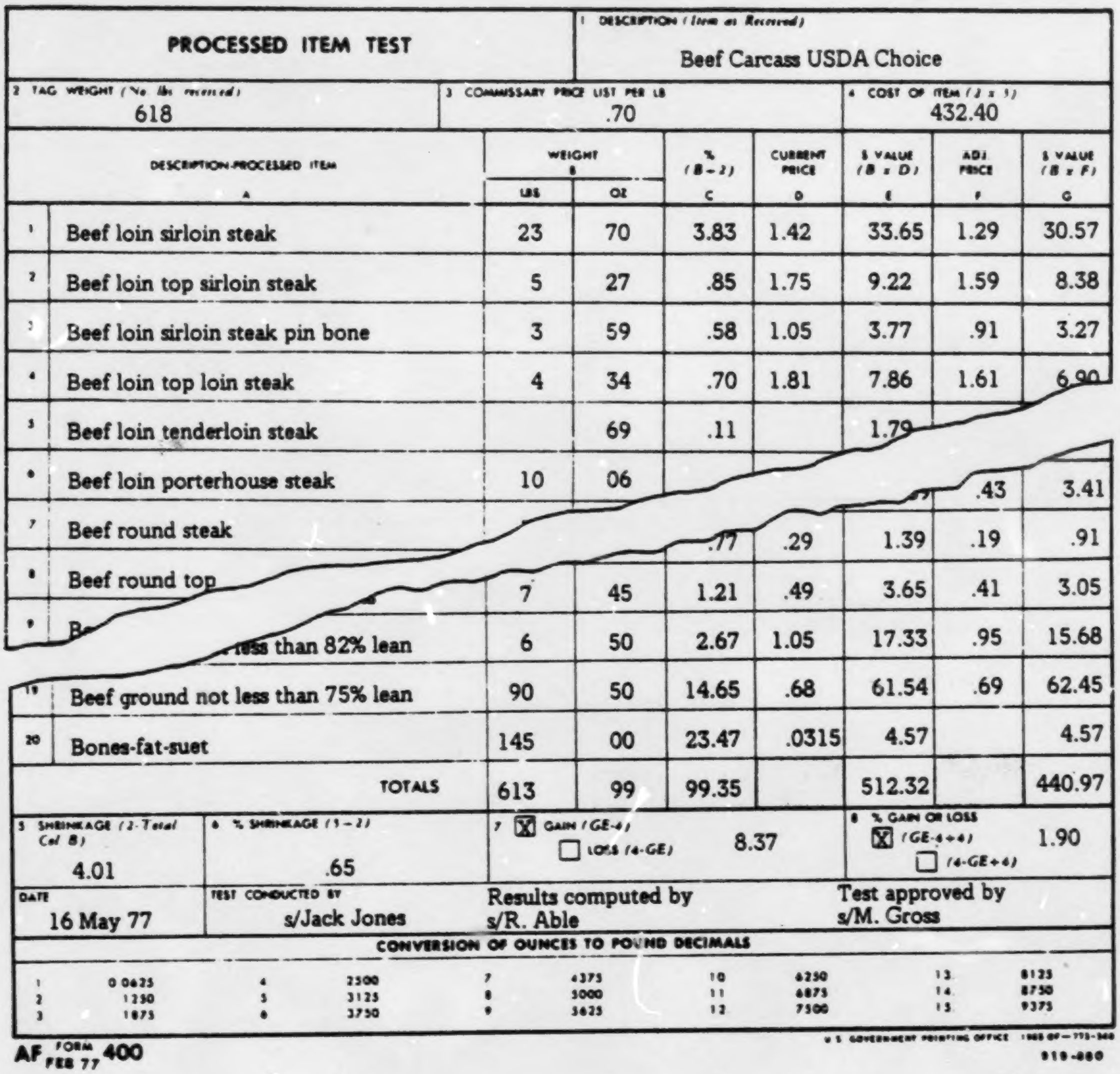
In this section, we will discuss cutting tests, testing ground meats for fat percentage, inventories, and price adjustments.

045. Distinguish between true and false statements concerning cutting tests and pricing charts.

Cutting Tests. The prescribed procedure for establishing retail prices for processed meats, meat products, and poultry is to predetermine the average yield for each cut in relation to the average weight of the wholesale article or carcass, taking into consideration the waste, bones, fat, and shrinkage. Shrinkage is a varying percentage of unavoidable loss. It is caused by normal evaporation of moisture and drainage during storage, cutting, display, and rewraps. Therefore, an initial markup of 1½ to 2 percent is required to cover these losses.

AF Form 400. Air Force Form 400, Processed Item Test (fig. 6-3), is used to record all cutting tests. The description of the wholesale article being tested is found in block 1. In block 2, the weight of the article is recorded. In block 3, the price per pound of the article is given, and the cost is recorded in block 4. The descriptions of the processed items are listed in column A. In column B is given the weight of each processed item. The percentage of yield for each retail cut, compared to the weight of the carcass or wholesale cut from which they were processed, is computed and entered in column C. Refer to the first processed item in figure 6-3. There are 23.70 pounds of beef loin sirloin steak. The 23.70 pounds of steak is divided by the weight of the wholesale article (618 pounds). For example, 23.70 ÷ 618 = 3.83 percent. Column D lists the price per pound of each item, and the value in column E. At this time, columns B, C, and E are totaled and the following information is obtained: The total percentage of yield, the total weight of the processed meat items, and the total value. The total value of the processed items compared to the cost of the wholesale article determines the profit or loss of the cutting test. The prices of the processed items are then adjusted to show the 1½ to 2 percent gain to cover losses. The adjusted prices are recorded in column F and the new value is given in column G. The gain is listed in block 7 and the percentage of gain is found in block 8. The shrinkage is obtained by deducting the total weight of the processed items from the weight of the wholesale article, and then recording the result in block 5. The weight of the shrinkage divided by the weight of the wholesale article gives the percentage of gain or loss recorded in blocks 7 and 8. The commissary officer or store manager must then approve the cutting test.

Frequency. Cutting tests must be conducted at least once a month, or when significant changes occur in weight ranges or when the style or method of cutting is changed for merchandising reasons. The results of the analysis of the cutting test dictates the necessity of other cutting tests. The consistency of the meatcutters in cutting up carcasses will also have a bearing on the frequency of tests.



PROCESSED ITEM TEST	1 DESCRIPTION (Item as Received) Beef Carcass USDA Choice

2 TAG WEIGHT (No. lbs received) 618	3 COMMISSARY PRICE LIST PER LB .70	4 COST OF ITEM (2 x 3) 432.40

	DESCRIPTION-PROCESSED ITEM	WEIGHT B		% (B ÷ 2)	CURRENT PRICE	$ VALUE (B x D)	ADJ PRICE	$ VALUE (B x F)
	A	LBS	OZ	C	D	E	F	G
1	Beef loin sirloin steak	23	70	3.83	1.42	33.65	1.29	30.57
2	Beef loin top sirloin steak	5	27	.85	1.75	9.22	1.59	8.38
3	Beef loin sirloin steak pin bone	3	59	.58	1.05	3.77	.91	3.27
4	Beef loin top loin steak	4	34	.70	1.81	7.86	1.61	6.90
5	Beef loin tenderloin steak		69	.11		1.79		
6	Beef loin porterhouse steak	10	06				.43	3.41
7	Beef round steak			.77	.29	1.39	.19	.91
8	Beef round top	7	45	1.21	.49	3.65	.41	3.05
9	Be less than 82% lean	6	50	2.67	1.05	17.33	.95	15.68
19	Beef ground not less than 75% lean	90	50	14.65	.68	61.54	.69	62.45
20	Bones-fat-suet	145	00	23.47	.0315	4.57		4.57
	TOTALS	613	99	99.35		512.32		440.97

5 SHRINKAGE (2-Total Col B) 4.01	6 % SHRINKAGE (5 ÷ 2) .65	7 ☒ GAIN (GE-4) ☐ LOSS (4-GE) 8.37	8 % GAIN OR LOSS ☒ (GE-4 ÷ 4) ☐ (4-GE ÷ 4) 1.90
DATE 16 May 77	TEST CONDUCTED BY s/Jack Jones	Results computed by s/R. Able	Test approved by s/M. Gross

CONVERSION OF OUNCES TO POUND DECIMALS

1	0.0625	4	.2500	7	.4375	10	.6250	13	.8125
2	.1250	5	.3125	8	.5000	11	.6875	14	.8750
3	.1875	6	.3750	9	.5625	12	.7500	15	.9375

AF FORM FEB 77 400

U.S. GOVERNMENT PRINTING OFFICE 1988 OF—775-340

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Figure 6-3. Air Force Form 400.

Consistency. When conducting cutting tests it is important that the same method of cutting and trimming be used to secure average yields of meat cuts. A uniform trim also insures the patron a true value of the product. This technique increases eye appeal and creates uniform movement. Tests on various carcass weights depend upon weight ranges used, grade, conformation, bone structure, and trim.

Accumulation of cutting tests results is necessary to set up average weights of resale cuts and can be continued indefinitely. Each time the figures become more valuable as a pricing tool. From accumulated cutting tests, the percent yield of each cut can be determined. This percentage, when applied to a given weight of a carcass, side, or wholesale cut, indicates the average weights of the resale meat cuts. The percentage of yield for resale cuts will remain the same as long as the method of cutting is not changed and quality (grades) remain constant.

Meat types. Cutting tests for all types of meat, that requires processing, are recorded on AF Form 400. A separate folder for each type (beef, pork, veal, lamb, and ham) is maintained in the meat department. Each form is kept for 6 months.

Special cuts. Although we must have consistent cutting tests, using the same method of cutting as we have discussed previously, that does not prohibit our occasional deviation for special orders. Meatcutters process special thickness and special cuts for customers. You and other meatcutters will also slice canned hams and tenderize meat cuts as requested to enhance customer service. Freezer orders for sides or quarters of beef may be processed on an optional basis, but first priority is maintaining the best possible meat selection in the display cases.

Pricing Charts. The pricing guide formats (fig. 6-4) assists the meat department manager in establishing retail prices for processed meat items. Selling prices, as listed on the charts, are merely an example, and these are not to be interpreted as actual prices to be used. Determination of selling prices are the results of several different factors, such as patron demand, variations in yield, and the results of AF Form 603, Record of Operation.

Use of pricing charts does not eliminate the requirements for cutting tests. Meats are procured in the types, weight ranges, and grades shown in the pricing charts.

Exercises (045):

Identify as true or false statements in exercises 1 through 7:

_____ 1. In establishing retail prices, the average price for each retail cut in relation to the average weight of the wholesale article must be determined.

_____ 2. AF Form 400, Processed Item Test, is used only for carcass beef.

_____ 3. The value of each processed item listed on AF Form 400 is determined by multiplying the weight by price per pound.

_____ 4. The amount of gain is determined by deducting the cost of the wholesale item being tested from the total processed value.

_____ 5. The percentage of yield for each retail cut will always remain the same.

_____ 6. Pricing charts may be used instead of cutting tests.

_____ 7. The same method of meatcutting remains the same for special orders and freezer orders.

046. Provide the missing information to incomplete selected statements regarding fat percentage testing.

Fat Percentage Tests. To insure that ground meats do not exceed the allowable fat percentage, fat tests are performed during each processing. The veterinarian also performs similar tests periodically to verify the commissary tests.

Allowable percentage of fat. Ground beef with fat content ranging from 19 to 25 percent must be labeled as "ground beef not less than 75 percent lean." This labeled ground beef never exceeds 25 percent fat content.

Ground beef containing 18 percent or less fat (derived from lean trimmings) is labeled as "ground beef not less than 82 percent lean."

Equipment. The fat measuring kit is contained in a carrying case consisting of two funnels, three test tubes, a calibrated scale with movable pointer, two cleaning brushes, a power cord with plug, and a heater.

Operation. A 2-ounce sample of ground meat is inserted under the heating element. The machine is turned on for a 15-minute interval (the machine may be unattended during this period), and fat is rendered from the sample. Both a calibrated scale and a movable pointer, located next to the test tube, are used to measure the percentage of fat that has dripped into the test tube. After each testing, wash the funnels, test tubes, and screen thoroughly.

Exercises (046):

Supply the missing information in the form of the correct or or words to complete required statements 1 through 5 respectively.

1. Ground meats are tested for fat content during each __________.
2. At no time should ground beef exceed __________ percent fat.
3. Ground beef from lean trimmings is labeled "ground beef not less than __________ percent lean."
4. Fat testing is accomplished by using a __________ ounce sample of ground meat.
5. Fat tests are completed in __________ minutes after turning the tester on.

047. Identify significant inventory and pricing procedures followed in the meat department.

Meat Department Inventory. The purpose of the meat department inventory is to determine the exact financial condition of the meat department. Inventories are taken semiannually, monthly, semimonthly, or if required, on a more frequent schedule. The inventory will assist in determining consumption factors and requirements, and adjusting gains or losses.

Operating instructions (OI). Commissary management publishes a detailed OI for meat department inventory. The OI outlines specific procedures for meat department employees in conducting the inventory.

Semiannual Formal Inventory. A physical inventory is taken during February and August of each year. AF Form 603 is used for inventory (fig. 6-5). The form is overprinted with the nomenclature of items to facilitate inventory. Commissary management appoints two distinct teams to perform two separate inventories and insure that all count differences are reconciled. All inventory entries are recorded in ink.

Inventory procedures. Items processed and packaged in the meat department are inventoried at the sale price indicated on each individual package. Indicate items so inventoried as a single line entry on the inventory form. For example, processed meats—$157.30. These items are not subject to an inventory

	CARCASS COST PER POUND									
	.63	.64	.65	.66	.67	.68	.69	.70	.71	.72
	SUGGESTED RESALE PRICES									
RETAIL CUTS	MIN MAX	MIN MAX	MIN MAX	MIN MAX	MIN MAX	MIN MAX	MIN MAX	MIN MAX	MIN MAX	MIN MAX
Porterhouse steak	1.33–1.63	1.35–1.65	1.37–1.67	1.39–1.69	1.41–1.71	1.43–1.73	1.45–1.75	1.47–1.77	1.49–1.79	1.51–1.81
T-bone steak	1.27–1.57	1.29–1.59	1.31–1.61	1.33–1.63	1.35–1.65	1.37–1.67	1.39–1.69	1.41–1.71	1.43–1.73	1.45–1.75
Sirloin steak	1.23–1.53	1.25–1.55	1.27–1.57	1.29–1.59	1.31–1.61	1.33–1.63	1.35–1.65	1.37–1.67	1.39–1.69	1.41–1.71
Top loin steak	1.35–1.65	1.37–1.67	1.39–1.69	1.41–1.71	1.43–1.73	1.45–1.75	1.47–1.77	1.49–1.79	1.51–1.81	1.53–1.83
Round steak	1.13–1.43	1.15–1.45	1.17–1.47	1.19–1.49	1.21–1.51	1.23–1.53	1.25–1.55	1.27–1.57	1.29–1.59	1.31–1.61
Top round steak	1.19–1.49	1.21–1.51	1.23–1.53	1.25–1.55	1.27–1.57	1.29–1.59	1.31–1.61	1.33–1.63	1.35–1.65	1.37–1.67
Bottom round stk	1.11–1.41	1.13–1.43	1.15–1.45	1.17–1.47	1.19–1.49	1.21–1.51	1.23–1.53	1.25–1.55	1.27–1.57	1.29–1.59
Tip steak	1.19–1.49	1.21–1.51	1.23–1.53	1.25–1.55	1.27–1.57	1.29–1.59	1.31–1.61	1.33–1.63	1.35–1.65	1.37–1.67
Chuck blade steak	.83–1.13	.85–1.15	.87–1.17	.89–1.19	.91–1.21	.93–1.23	.95–1.25	.97–1.27	.99–1.29	1.01–1.31
Chuck 7-bone stk	.87–1.17	.89–1.19	.91–1.21	.93–1.23	.95–1.25	.97–1.27	.99–1.29	1.01–1.31	1.03–1.33	1.05–1.35
Cube steak	1.17–1.47	1.19–1.49	1.21–1.51	1.23–1.53	1.25–1.55	1.27–1.57	1.29–1.59	1.31–1.61	1.33–1.63	1.35–1.65
Flank steak	1.15–1.45	1.17–1.47	1.19–1.49	1.21–1.51	1.23–1.53	1.25–1.55	1.27–1.57	1.29–1.59	1.31–1.61	1.33–1.63
Rib steak	1.11–1.41	1.13–1.43	1.15–1.45	1.17–1.47	1.19–1.49	1.21–1.51	1.23–1.53	1.25–1.55	1.27–1.57	1.29–1.59
Top round roast	1.11–1.41	1.13–1.43	1.15–1.45	1.17–1.47	1.19–1.49	1.21–1.51	1.23–1.53	1.25–1.55	1.27–1.57	1.29–1.59
Bottom round rst	1.09–1.39	1.11–1.41	1.13–1.43	1.15–1.45	1.17–1.47	1.19–1.49	1.21–1.51	1.23–1.53	1.25–1.55	1.27–1.57
Tip roast	1.17–1.47	1.19–1.49	1.21–1.51	1.23–1.53	1.25–1.55	1.27–1.57	1.29–1.59	1.31–1.61	1.33–1.63	1.35–1.65
Rib roast	1.09–1.39	1.11–1.41	1.13–1.43	1.15–1.45	1.17–1.47	1.19–1.49	1.21–1.51	1.23–1.53	1.25–1.55	1.27–1.57
Chuck blade roast	.81–1.11	.83–1.13	.85–1.15	.87–1.17	.89–1.19	.91–1.21	.93–1.23	.95–1.25	.97–1.27	.99–1.29
Chuck 7-bone rst	.89–1.19	.91–1.21	.93–1.23	.95–1.25	.97–1.27	.99–1.29	1.01–1.31	1.03–1.33	1.05–1.35	1.07–1.37
Chuck arm roast	.91–1.21	.93–1.23	.95–1.25	.97–1.27	.99–1.29	1.01–1.31	1.03–1.33	1.05–1.35	1.07–1.37	1.09–1.39
Eye round roast	1.27–1.57	1.29–1.59	1.31–1.61	1.33–1.63	1.35–1.65	1.37–1.67	1.39–1.69	1.41–1.71	1.43–1.73	1.45–1.75
Short ribs	.61– .91	.63– .93	.65– .95	.67– .97	.69– .99	.71–1.01	.73–1.03	.75–1.05	.77–1.07	.79–1.09
Stew meat	.91–1.21	.93–1.23	.95–1.25	.97–1.27	.99–1.29	1.01–1.31	1.03–1.33	1.05–1.35	1.07–1.37	1.09–1.39
Ground beef 75%	.65– .95	.67– .97	.69– .99	.71–1.01	.73–1.03	.75–1.05	.77–1.07	.79–1.09	.81–1.11	.83–1.13
Ground beef 82%	.93–1.23	.95–1.25	.97–1.27	.99–1.29	1.01–1.31	1.03–1.33	1.05–1.35	1.07–1.37	1.09–1.39	1.11–1.41

Figure 6-4. AFCOMS beef pricing chart.

SECTION III—INVENTORY

ITEM	QTY	PRICE	AMOUNT		ITEM	QTY	PRICE	AMOUNT	
Cheese, Amer, lb.	18½	.65	12	02	BROUGHT FORWARD			7237	55
Cheese, Swiss, lb.	3	.67	2	01					
Bacon, Slab, lb.	128	.60	76	80					
Bacon (lean), Slab, lb.	15	.62	9	30					
Ham, Cooked, lb.	218	.80	174	40					
Ham, Cooked, (sli), lb.	106	.85	90	10					
Beef Carcass, lb.	7845	.70	5491	50					
Ham, Fresh, lb.	240	.53	127	20					
Ham, Fresh, Shank, lb.	77	.47	36	19					
Ham, Smoked, lb.	197½	.49	96	65					
Pork, Boston Butt, lb.	38	.49	18	62					
Veal, Sides, lb.	228	.90	205	20					
Beef Liver, lb.	18	.67	12	06					
Pork, Loin, lb.	500	.77	385	00					
Processed Meats			500	50					
CARRIED FORWARD			7237	55	TOTAL			7237	55

Figure 6-5. Record of operation (Section III).

price adjustment in the succeeding month. Price fat, suet, and bones which have not been disposed of before the inventory at 90 percent of the established contract price. This is indicated on the form as a single line item entry in the same manner as prescribed for processed items.

Vendor packaged merchandise is inventoried by item at the selling price in effect on the last day of sale prior to inventory. Invoice costs must be recouped when two or more lots procured at different prices are on hand.

Items awaiting processing are inventoried at the exact invoice cost.

Other Inventories. A semimonthly inventory is taken on the Saturday closest to the 15th of the month and the last sales day of the calendar month. This inventory determines that the established retail prices are not resulting in excessive profits or a loss. Persons taking the counts, recording, and making extensions sign the inventory forms. Additionally, the meat department manager and store manager will sign to attest to the correctness of the inventory. Accomplish all inventories using AF Form 603. The semimonthly inventory may be taken, using dollar inventory procedures to the extent feasible. A copy of the inventory is kept for 6 months. If the inventory results in excessive gains or at a loss, the commissary officer attaches an explanation and a statement of corrective action.

Record of Operation. After the physical count, recording, and extensions the front of AF Form 603 is completed. This is the actual sales record, listing the operating gains or losses for the meat department. Refer to figure 6-6 as we discuss this form. Section I lists cash and/or charge sales for each day of the two week period and then totaled. Section II lists the opening inventory and receipts for this period.

Section IV. The total sales from section I is entered in block 1 of section IV. The total receipts from section II is entered in block 2. The total inventory is taken from the reverse side of the form (section III) and entered in block 3. To get the value of the items sold, the total inventory is subtracted from the total receipts and placed in block 4. The gain or loss is the difference between block 1 and block 4. The gain or loss is listed in block 5. In this case, we see a loss of $14.75. The percentage of loss is found by dividing the loss by the total sales. In block 7, we enter the cumulative gain or loss for the six month period to date. The percentage is listed in block 8.

A gain or loss of up to 3 percent of sales for the evaluation period is permitted (evaluation period is the period since last inventory, usually 15 days). This variance is authorized to permit flexibility while recovering losses or decreasing gains during subsequent evaluation periods. It is not an authorization for the meat department to operate at a gain or loss. An operating gain or loss of 0.1 of 1 percent is authorized on the semiannual inventory. Control section personnel tabulate the results on the AF Form 603 and forward the results to store and complex management personnel prior to the next duty day.

Rework file. All losses resulting from damage or deterioration are supported from the initial markup. Normal losses resulting from deterioration and items processed to other retail saleable items are recorded on AFCOMS Form 1001, Rework File. The commissary officer or his designated representative initials all individual entries in excess of $20. The rework file is attached to the AF Form 603 for the accounting period.

Pricing Meat Items. Selling prices of processed meat items are set at a level to recoup invoice costs. Prices for processed items are based on cutting tests, analysis of operation, standard commercial prices for comparable items, and customer demand. Care is exercised to prevent wide fluctuations in sell prices. The meat department manager must obtain approval from the commissary officer or store manager prior to adjusting prices.

Factors on Pricing Cuts. Based on the yield, the following factors are considered when establishing the price of each cut:

a. Prevailing commercial prices.
b. Season and approaching holidays.
c. Demand for steaks and ground meat.
d. Demand for roast on holidays.

Exercises (047):

1. List the two types of inventories that are taken in the meat department.

2. When should each of the inventories be performed?

3. List the method used to inventory processed meats.

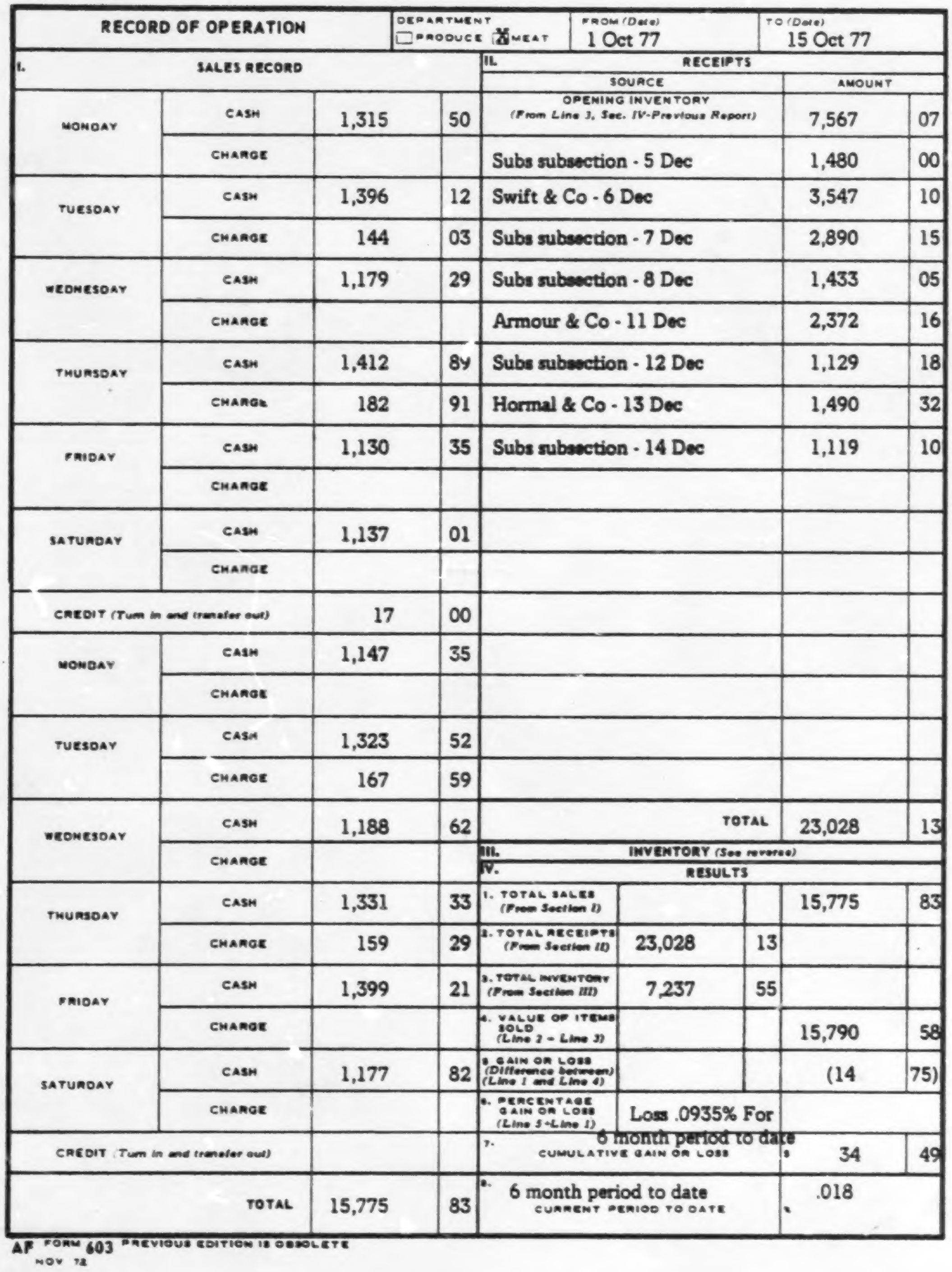
4. Why are variances authorized in the meat department's gains or losses?

5. What individual must initial entries in excess of $20 on AFCOMS Form 1001, Rework File?

6. List the factors to be considered in pricing retail cuts.

6-4. Inspections and Evaluations

One of the supervisor's major duties is the evaluation of his department's operation. At this time he should receive self-satisfaction of a job well done. He



RECORD OF OPERATION	DEPARTMENT ☐ PRODUCE ☒ MEAT	FROM (Date)	TO (Date)
		1 Oct 77	15 Oct 77

I. SALES RECORD

MONDAY	CASH	1,315	50
	CHARGE		
TUESDAY	CASH	1,396	12
	CHARGE	144	03
WEDNESDAY	CASH	1,179	29
	CHARGE		
THURSDAY	CASH	1,412	89
	CHARGE	182	91
FRIDAY	CASH	1,130	35
	CHARGE		
SATURDAY	CASH	1,137	01
	CHARGE		
CREDIT *(Turn in and transfer out)*		17	00
MONDAY	CASH	1,147	35
	CHARGE		
TUESDAY	CASH	1,323	52
	CHARGE	167	59
WEDNESDAY	CASH	1,188	62
	CHARGE		
THURSDAY	CASH	1,331	33
	CHARGE	159	29
FRIDAY	CASH	1,399	21
	CHARGE		
SATURDAY	CASH	1,177	82
	CHARGE		
CREDIT *(Turn in and transfer out)*			
TOTAL		15,775	83

II. RECEIPTS

SOURCE	AMOUNT	
OPENING INVENTORY *(From Line 3, Sec. IV-Previous Report)*	7,567	07
Subs subsection - 5 Dec	1,480	00
Swift & Co - 6 Dec	3,547	10
Subs subsection - 7 Dec	2,890	15
Subs subsection - 8 Dec	1,433	05
Armour & Co - 11 Dec	2,372	16
Subs subsection - 12 Dec	1,129	18
Hormal & Co - 13 Dec	1,490	32
Subs subsection - 14 Dec	1,119	10
TOTAL	23,028	13

III. INVENTORY *(See reverse)*

IV. RESULTS

1. TOTAL SALES *(From Section I)*			15,775	83
2. TOTAL RECEIPTS *(From Section II)*	23,028	13		
3. TOTAL INVENTORY *(From Section III)*	7,237	55		
4. VALUE OF ITEMS SOLD *(Line 2 - Line 3)*			15,790	58
5. GAIN OR LOSS *(Difference between) (Line 1 and Line 4)*			(14	75)
6. PERCENTAGE GAIN OR LOSS *(Line 5 ÷ Line 1)*	Loss .0935% For 6 month period to date			
7. CUMULATIVE GAIN OR LOSS			$ 34	49
8. 6 month period to date CURRENT PERIOD TO DATE			.018 %	

AF FORM 603 NOV 72 PREVIOUS EDITION IS OBSOLETE

Figure 6-6. Record of operation.

accomplishes this duty by careful and thorough inspections of all phases of the meat department operation. How customer complaints are resolved are of the utmost importance.

048. List the areas of inspection within the meat department and complete a series of statements about most department inspections and substandard conditions.

Inspections. The meat department manager directs the meat department operation, plans for improvements, and insures that improved methods and procedures are placed in effect and followed. For proper department operation he must continuously inspect all phases of the operation. Otherwise, he could not detect procedures or conditions that need improvement. His duties include inspecting meat and supplies for quantity and condition. In addition, he inspects the entire meat processing procedure: meatcutting, wrapping, pricing, and displaying. The supervisor insures that early morning breaking crews break a full day's supply of carcass beef into primal or subprimal cuts for processing into retail cuts. He plans for preparation of at least 50 percent of the daily requirements prior to the time it is needed. Preparation of this type is essential to insure a complete supply of retail cuts is available for display at all times.

Substandard conditions. Whenever you notice procedures or conditions that can be improved, notify your supervisor. If he thinks more space will help, he will take action to secure more space, additional tables and equipment, or whatever is necessary to make work safer and more efficient. Stay alert to possible hazards. Your supervisor will call in specialists, as needed, to correct such conditions as defective electrical applicances, refrigeration equipment, etc. Meatcutters are not allowed to make major repairs to such equipment. Have your subordinates report substandard conditions that your supervisor may not know about.

Exercises (048):

1. List the areas of inspection within the meat department.

2. Supply the missing word or words for each of the following:
   a. For proper operation the meat department manager must __________ inspect all phases of the operation.
   b. Prior to the time it is needed, the meat department manager plans for preparation of at least __________ __________ of the daily requirements.
   c. Meatcutters are __________ __________ to make major repairs in such equipment as electrical appliances or refrigeration equipment.

049. Supply the significant factors to be analyzed in evaluating the effectiveness of the meat department operation and distinguish true from false statements about this operational effectiveness.

Operations Evaluation. The supervisor evaluates the effectiveness of the meat department operation by analyzing four factors: customer complaints, production charts, reports, and accounting records. Each has a separate meaning. All of them combined tell how efficiently the department is operating.

Exercises (049):

1. List the factors to be analyzed in evaluating effectiveness of the meat department operation.

2. Identify by T for true or F for false each of the following statements related to operations evaluation:
   ____ a. The effectiveness of the meat department operation is evaluated by the supervisor.
   ____ b. The factors analyzed in the operations evaluation of the meat department have little meaning except as taken as a whole.
   ____ c. An analysis of the four factors combined will tell you how efficiently the meat department is operating.

050. Describe the correct procedure to use when a customer complains and identify correct and incorrect statements about resolving customer problems.

Resolving Customer Problems. No problems are more delicate than that of resolving customer complaints. What you say and how, and your manner toward customers determines whether you resolve customer problems or whether you have a more difficult time. According to industrial studies, human relations have a greater influence on a person's success than any other single factor. Some days will be more difficult than others, and customers will complain.

Suppose one says that he got a tough cut of meat. Should you suggest that the meat was not prepared properly? No, this would likely add fuel to the flames. Should you defend your meat as "only the very best?" This, too, is likely to further upset the customer and put him or her on the defensive. Probably the best solution is to listen carefully to what is said and then ask how you can serve him/her now. You will always gain by being considerate of people and by listening to their side of the story. This does not mean that supervisors or meatcutters should take abuse and insult. But very few people will furnish such abuse in the face of courtesy and consideration.

Exercises (050):

1. State the correct procedure to use when a customer complains.

2. Indicate by COR. for CORRECT and INCOR. for INCORRECT the truth or falsity of each of these statements about the resolving of customer problems:
   ____ a. According to industrial studies, human relations have a greater influence on a person's success than any other single factor.
   ____ b. If necessary, meat department personnel should be prepared to take abuse and insult silently in order to maintain good customer relations.
   ____ c. One thing you might say to defuse the situation when a customer complains is that he got a tough cut of meat.
   ____ d. You should not try to defend your meat as "only the very best," because this is likely to further upset the customer and put him or her on the defensive.

051. State the purpose of the USAF Graduate Evaluation Program.

Reasons for Program. The Graduate Evaluation Program is a major aid in the quality control of formal and career development courses and serves as a source of information to determine the following:

a. Ability of recent graduates to perform their assigned tasks to the level of proficiency specified in the applicable training standard.

b. Extent to which acquired skills are used by recent graduates.

c. Extent to which knowledge attained is retained by recent graduates.

d. Need to revise the approved specialty training standard, formal or career development course in order to improve training effectiveness and responsiveness to the requirements of the using commands.

e. Need for further evaluation of training problems identified by the evaluation of graduates.

Exercises (051):

1. State the purpose of the USAF Graduate Evaluation Program.

2. Some of the following statements about what is determined, using the USAF Graduate Evaluation Program as a source, are valid; some, invalid. Write V for those VALID and IV for those INVALID:
   ____ a. The extent to which acquired skills are used by recent graduates.
   ____ b. The need for further evaluation of training problems identified by the voluntarily submitted comments of graduates.
   ____ c. The ability of recent graduates to perform their assigned tasks to the level of proficiency specified in the applicable training standard.
   ____ d. The extent to which knowledge attained by recent graduates is used by them to innovate in solving problems on the job.
   ____ e. The need to revise the approved specialty training standard, formal or career development course in order to improve training effectiveness and responsiveness to the requirements of the using commands.

ANSWERS FOR EXERCISES

NOTE: Chapter I answers omitted due to the omission of Chapter I.

CHAPTER 2

006 - 1. a. 3.
b. 4.
c. 5.
d. 1.
e. 7.
f. 2.
g. 6.
h. 8.
i. 7.
j. 8.

007 - 1. Grinder.
007 - 2. Overheating.
007 - 3. Safety interlock switch.
007 - 4. End slice plate.
007 - 5. Meat gauge plate.

008 - 1. F.
008 - 2. T.
008 - 3. F.
008 - 4. T.

009 - 1. Intended purpose.
009 - 2. 1. Metal mesh gloves; 2. Safety aprons; 3. Hard hats; and 4. Safety shoes.
009 - 3. Away.
009 - 4. Knife pouch or storage rack.
009 - 5. Hooks.
009 - 6. Guards and guides.
009 - 7. Safety interlock switches.
009 - 8. Metal mesh glove.
009 - 9. Faulty or exposed; firmly secured; covers.
009 - 10. Alarms and fire axes.
009 - 11. Legs.

010 - 1. 170°.
010 - 2. Replace.
010 - 3. Raw pork or poultry.
010 - 4. Remove.
010 - 5. Week.
010 - 6. Cutting boards.
010 - 7. Paper.

011 - 1. Cleanliness and grooming; clothing; health.
011 - 2. Because you must work in temperatures of 0 to 50° F.

012 - 1. Processing area, equipment; display cases; storage area; personnel; meat on display; food handlers cards; meat.
012 - 2. To insure proper receiving temperatures for beef and poultry.

CHAPTER 3

013 - 1. Storage manager.
013 - 2. Three.
013 - 3. DPSC.
013 - 4. 100.

014 - 1. F.
014 - 2. T.
014 - 3. F.
014 - 4. F.
014 - 5. T.

015 - 1. Pull.
015 - 2. Quality assurance.
015 - 3. Dates of pack.
015 - 4. Feb 17.
015 - 5. Alpha numerical.
015 - 6. Mar 20.
015 - 7. 21 days; 15 days.

016 - 1. a. 3.
b. 6.
c. 2.
d. 5.
e. 1.
f. 4.

016 - 2. Posted on the outside of the temperature box and recorded on the charts. At the beginning and at the end of the day.

017 - 1. a. 2.
b. 1.
c. 1.
d. 3.
e. 2.

017 - 2. The type of cure; the length of the smoking period; the method of packaging.

017 - 3. Vinegar and salt-water.

CHAPTER 4

018 - 1. a. 3.
b. 2.
c. 4.
d. 1.

018 - 2. Any five of the following eight:
a. Loins.
b. Spareribs.
c. Hams.
d. Boston butts.
e. Bacon.
f. Shoulders.
g. Picnics.
h. Fat back.

019 - 1. a. 3.
b. 5.
c. 4.
d. 1.
e. 6.
f. 2.

020 - 1. a. 3, 4.
b. 3, 4.
c. 6.
d. 7.
e. 1.
f. 5.
g. 2, 4.

020 - 2. a. 3, 4, 5, 7.
b. 1, 6.
c. 1, 2, 8.
d. 1.
e. 1, 2, 3.
f. 1, 2, 3.
g. 4.

021 - 1. a. T.
b. F. Change all to excess.
c. F. Leave the gland on the tip.
d. T.
e. F. Change "above" to "below."

021 - 2. These are: (1) measuring 3 inches from the eye on the loin end and marking, and (2) locating the natural seam and following the contour of the round, cutting in a straight line to the 3-inch mark.

021 - 3. These are:
a. The fifth sacral vertebra.
b. The rump knucklebone.

022 - 1. Flank.
022 - 2. Sirloin tip.
022 - 3. Bone-in round.
022 - 4. Heel of round.
022 - 5. Sirloin tip; bottom round.
022 - 6. Hipbone.
022 - 7. Porterhouse.
022 - 8. Top loin.
022 - 9. b.
e.
d.
g.
a.
f.
c.

023 - 1. T.
023 - 2. T.
023 - 3. F. Change "5" to "7."
023 - 4. F. Delete short ribs.
023 - 5. T.
023 - 6. a. R.
b. R.
c.
d. R.
e.
f.
g.
g. R.
h. R.

024 - 1. 1/2.
024 - 2. Chuck; shoulder.
024 - 3. 3.
024 - 4. Blade.
024 - 5. c.
a.
f.
d.

025 - 1. F.
025 - 2. T.
025 - 3. F.
025 - 4. F.
025 - 5. a. Short loin.
b. Armbone chuck.
c. Blade chuck.
d. Shoulder.

026 - 1. a. 2.
b. 2.
c. 1.
d. 1.
e. 1.
f. 2.
g. 1.
h. 2.

027 - 1. a. 4.
b. 1.
c. 3.
d. 2.
e. 5.

028 - 1. a. 3.
b. 4.
c. 1.
d. 2.

029 - 1. F.
029 - 2. T.
029 - 3. T.

030 - 1. F.
030 - 2. F.
030 - 3. F.
030 - 4. T.
030 - 5. T.
030 - 6. F.
030 - 7. T.
030 - 8. F.
030 - 9. T.

031 - 1. Under 12 pounds.
031 - 2. 12 pounds and over.
031 - 3. 12 pounds and over.
031 - 4. Under 12 pounds.
031 - 5. Under 12 pounds.

032 - 1. 1/2.
032 - 2. 12; 6.
032 - 3. Seven.
032 - 4. Loin end.
032 - 5. Carving easier.

033 - 1. Slab bacon is cut into one or two pound pieces, or sliced and displayed in one pound packages. Salt port is processed in pieces or sliced for display in not more than 1 pound packages.
033 - 2. a. F.
  b. T.
  c. T.

034 - 1. T.
034 - 2. F.
034 - 3. F.
034 - 4. T.
034 - 5. F.
034 - 6. T.

035 - 1. F.
035 - 2. T.
035 - 3. T.
035 - 4. F.
035 - 5. F.

CHAPTER 5

036 - 1. a. F.
  b. F.
  c. F.
036 - 2. a. 10S; 14.
  b. 4S or 8S; 14 and 16 for 8S.
  c. 2S; 14.
  d. 2; 14.
  e. 1; 11.

037 - 1. a. 1.
  b. 1.
  c. 2.
  d. 2.
037 - 2. Proper packaging enhances bloom and causes the product to appear more attractive and palatible.
037 - 3. a. 5.
  b. 2.
  c. 3.
  d. 1, 4.

038 - 1. a. 6.
  b. 5.
  c. 1.
038 - 2. The oldest meat cuts are placed in the front of display case (nearest the customer).

CHAPTER 6

039 - 1. a. I.
  b. I.
  c. II.
  d. I.
  e. II.
039 - 2. The quantity of category I equipment is based on the classification of the store, and is normally obtained by local procurement.
039 - 3. The commissary officer.
039 - 4. Handtools, cleaning supplies, knives and plates for grinders, packaging trays, wrapping film.
039 - 5. Surcharge revolving fund.

040 - 1. T.
040 - 2. F. Delete "not."
040 - 3. F. Change "60" to "30."
040 - 4. T.

041 - 1. F.
041 - 2. F.
041 - 3. T.
041 - 4. F.

042 - 1. a. Grocery.
  b. Meat department.
  c. Meat department.
  d. Meat department.
  e. Meat department.
042 - 2. Papain-papaya, bromelin-pineapple, and ficin-figs.
042 - 3. 24.
042 - 4. In bulk.

043 - 1. In deciding the amounts of meat to display use past sales and space available. Factors to consider in deciding the types of meat to display are consumption data, customer preference, religious custom, holidays, season and availability of the product.
043 - 2. a. F.
  b. T.
  c. F.
  d. T.

044 - 1. Past purchases; changes in base mission; and performance standards.
044 - 2. a. T.
  b. F.
  c. T.
  d. T.

045 - 1. F.
045 - 2. F.
045 - 3. T.
045 - 4. T.
045 - 5. F.
045 - 6. F.
045 - 7. F.

046 - 1. Processing.
046 - 2. 25.
046 - 3. 82.
046 - 4. Two.
046 - 5. 15.

047 - 1. Semiannual and semimonthly.
047 - 2. The semiannual inventory is taken on the last workday of April and October of each year. The semimonthly inventory is taken on the Saturday closest to the 15th of the month and the last sales day of the calendar month.
047 - 3. Processed meats are inventoried as a single line entry on the inventory form.
047 - 4. To permit flexibility while recovering losses or decreasing gains during subsequent evaluation periods.

047 - 5. The commissary officer or his designated representative.

047 - 6. Prevailing commercial prices, season and approaching holidays, demand for steaks and ground meat, and demand for roast on holidays.

048 - 1. Meat and supplies, meatcutting, wrapping, pricing, and displaying.

048 - 2. a. Continuously.
b. 50 percent.
c. Not allowed.

049 - 1. Customer complaints, production charts, reports, and accounting records.

049 - 2. a. T.
b. F.
c. T.

050 - 1. Listen carefully to what is said and then ask how you can serve him/her now.

050 - 2. a. COR.
b. INCOR.
c. INCOR.
d. COR.

051 - 1. The Graduate Evaluation Program is a major aid in the quality control of formal and career development courses and serves as a source of information to determine graduate performance, the use of acquired skills and retension of attained knowledge by graduates, revision needs to improve training effectiveness and responsiveness to using commands' requirements, and the heed for further evaluation of training problems.

051 - 2. a. V.
b. IV.
c. V.
d. IV.
e. V.

STOP - 1. MATCH ANSWER SHEET TO THIS EXERCISE NUMBER.
2. USE NUMBER 2 PENCIL ONLY.

EXTENSION COURSE INSTITUTE
VOLUME REVIEW EXERCISE

6115 01 01
MEATCUTTER

Carefully read the following:

DO's:

1. Check the "course," "volume," and "form" numbers from the answer sheet address tab against the "VRE answer sheet identification number" in the righthand column of the shipping list. If numbers do not match, return the answer sheet and the shipping list to ECI immediately with a note of explanation.
2. Note that item numbers on answer sheet are sequential in each column.
3. Use a medium sharp #2 black lead pencil for marking answer sheet.
4. Write the correct answer in the margin at the left of the item. (When you review for the course examination, you can cover your answers with a strip of paper and then check your review answers against your original choices.) After you are sure of your answers, transfer them to the answer sheet. If you have to change an answer on the answer sheet, be sure that the erasure is complete. Use a clean eraser. But try to avoid any erasure on the answer sheet if at all possible.
5. Take action to return entire answer sheet to ECI.
6. Keep Volume Review Exercise booklet for review and reference.
7. If mandatorily enrolled student, process questions or comments through your unit trainer or OJT supervisor. If voluntarily enrolled student, send questions or comments to ECI on ECI Form 17.

DON'Ts:

1. Don't use answer sheets other than one furnished specifically for each review exercise.
2. Don't mark on the answer sheet except to fill in marking blocks. Double marks or excessive markings which overflow marking blocks will register as errors.
3. Don't fold, spindle, staple, tape, or mutilate the answer sheet.
4. Don't use ink or any marking other than a #2 black lead pencil.

NOTE: **NUMBERED LEARNING OBJECTIVE REFERENCES ARE USED ON THE VOLUME REVIEW EXERCISE.** In parenthesis after each item number on the VRE is the Learning Objective Number where the answer to that item can be located. When answering the items on the VRE, refer to the Learning Objectives indicated by these Numbers. The VRE results will be sent to you on a postcard which will list the actual VRE items you missed. Go to the VRE booklet and locate the Learning Objective Numbers for the items missed. Go to the text and carefully review the areas covered by these references. Review the entire VRE again before you take the closed-book Course Examination.

NOTE: Questions 1-8 have been omitted due to the omission of Chapter I.

9. (006) Which of the following handtools has a wide bevel?

a. Steak knife.
b. Boning knife.
c. Handsaw.
d. Butchers steel.

10. (006) Which of the following handtools will normally get the most use?

a. Sharpening Stones.
b. Butchers Steel.
c. Boning Hooks.
d. Knives.

11. (007) The first step in operating the bandsaw is to

a. turn on the switch.
b. push the carriage toward the blade.
c. adjust the meat gauge plate.
d. place the meat firmly against the gauge plate.

12. (007) The piece of powered equipment that has a sharpening attachment is the

a. meat slicer.
b. meat grinder.
c. bandsaw.
d. meat tenderizer.

13. (008) Equipment used in the meat department should be arranged in such a manner as to

a. process beef first.
b. utilize all existing space.
c. minimize distance from the lavatory.
d. minimize distance between preparation points.

14. (008) The first consideration for deciding the location of the lavatory is the

a. convenience for customers.
b. convenience for meatcutters.
c. entrance to the meat market.
d. necessity for sufficient airspace between it and the meatrooms.

15. (009) While operating powered equipment do not wear

a. hard hats.
b. safety shoes.
c. safety aprons.
d. metal mesh gloves.

16. (009) When cleaning any powered equipment the first thing to do is

a. install ground wires.
b. firmly secure the electrical outlet.
c. check for faulty electrical power cords.
d. turn off the power to the equipment or remove the plug from the outlet.

17. (010) To maintain proper sanitation in the meat department, the minimum temperature of water must be

a. 150° F.
b. 160° F.
c. 170° F.
d. 180° F.

18. (010) If heavy paper or mats are used on the processing area floors, this material must be removed and the floors cleaned

a. daily.
b. twice a week.
c. three times a week.
d. weekly.

19. (011) To prevent the spread of germs, which of the following should be performed most frequently?

a. Going to the dispensary.
b. Washing your hands.
c. Getting plenty of rest.
d. Changing smocks and aprons.

20. (012) The primary purpose of veterinarian inspections is to

a. prevent the spread of germs and infectious diseases.
b. insure that customers are sold only the highest quality meats.
c. maintain high standards of sanitation for meatcutters.
d. maintain high standards of sanitation for equipment and facilities.

21. (013) When receiving meat from the commissary warehouse, whi
copy or copies of the AF Form 129 must the inchecker sign?

a. Second copy.
b. First and second copy.
c. First and third copy.
d. Second and third copy.

22. (013) All carcass meats must be

a. age graded when received.
b. 100 percent weighed when received.
c. inventoried at weights supplied by the vendor.
d. weighed, when received, at the discretion of the commissary officer.

23. (014) Which of the following statements reflect proper storage procedure?

a. Store beef quarters in front of any beef remaining from previous deliveries.
b. Store beef quarters to allow for proper air circulation.
c. Store frozen chickens on meat hooks.
d. Stack frozen meat 2 inches from the wall.

24. (014) Which of the following is not stored on meat hooks?

a. Poultry.
b. Lamb.
c. Veal.
d. Beef.

25. (015) If a package of bacon had a code date marked Mar 6, what type of code date system is being used?

a. Revised AMI system.
b. Alpha numerical system.
c. Quality assurance system.
d. Standard AMI system.

26. (015) To insure a reasonable home storage period, almost all fresh chilled pork sausage must be delivered

a. within 5 days after packaging.
b. within 10 days after packaging.
c. within 72 hours after packaging.
d. within 96 hours after packaging.

27. (016) What distance from the floor are thermometers located in refrigerated areas?

a. 2 feet.
b. 4 feet.
c. 5 feet.
d. 6 feet.

28. (017) What is the approxiamte keeping time of a frozen beef carcass?

a. 4 months.
b. 6 months.
c. 8 months.
d. 10 months.

29. (018) The presence of a break joint is a characteristic in

a. beef carcass.
b. veal carcass.
c. lamb carcass.
d. pork carcass.

30. (018) A type of meat that has been on the hoof over one year is classified as

a. veal.
b. lamb.
c. mutton.
d. baby beef.

31. (019) Cattle have 13 ribs which are connected on one end to the backbone and on the other end to the

a. breastbone.
b. pelvic bone.
c. neckbone.
d. foreshank bone.

32. (020) Which of the following correctly states the yield from the heel of round?

a. Ground beef, club steak, and roast.
b. Ground beef, stew beef, and roast.
c. Sirloin tip steak, porterhouse steak, T-bone steak, and top loin steak.
d. Swiss steak, roast, and ground beef.

33. (020) Which of the following correctly states the yield from the neck area?

a. Ground beef, stew beef, and boneless roast.
b. Ground beef, stew beef, and cube steaks.
c. Ground beef, stew beef, and pin bone steaks.
d. Short ribs, ground beef, and cube steaks.

34. (021) The flank is removed from the hindquarter

a. 3 inches from eye, on loin end.
b. 4 inches from eye, on loin end.
c. 5 inches from eye, on loin end.
d. 6 inches from eye, on loin end.

35. (021) The full loin of a beef hindquarter is removed using which of the following as pivot points for the cutting line?

a. Aitch bone and rump knucklebone.
b. Fourth sacral vertebra and rump knucklebone.
c. Fifth sacral vertebra and rump knucklebone.
d. Pinbone and rump knucklebone.

36. (022) The retail cut that has grains running lengthwise is

a. flank steak.
b. sirloin tip steak.
c. round steak.
d. T-bone steak.

37. (022) The silver strip is located between the

a. top and bottom round.
b. eye and bottom round.
c. eye and top round.
d. sirloin tip and bottom round.

38. (022) Before cutting the short loin of beef into steaks remove excess flank meat and remove any tails that exceed

a. 1/2 inch.
b. 1 inch.
c. 3/4 inch.
d. 1/4 inch.

39. (023) The wing section of a beef forequarter is separated from the cross-cut section between the

a. fourth and fifth ribs.
b. fifth and sixth ribs.
c. sixth and seventh ribs.
d. seventh and eight ribs.

40. (023) Before processing the beef rib into retail cuts, remove the chine bone and trim the

a. backbone.
b. knuckle bones.
c. backstrap.
d. featherbones.

41. (024) To avoid a large bone in the first beef arm roast, remove the foreshank from the crosscut section

a. one-half inch above the knuckle on the shoulder side.
b. one-half inch below the knuckle on the shoulder side.
c. one inch above the knuckle on the shoulder side.
d. one inch below the knuckle on the shoulder side.

42. (024) The cross rib is separated from the beef arm between the

a. second and third ribs.
b. third and fourth ribs.
c. fourth and fifth ribs.
d. fifth and sixth ribs.

43. (024) The first cut beef chuck roast is identified by the presence of the

a. blade cartilage.
b. blade bone.
c. seven bone.
d. neck bone.

44. (025) The fat on fabricated, sub-primal cuts of beef is normally, trimmed down to

a. one-half inch.
b. one inch.
c. one and one-half inch.
d. two inches.

45. (026) A major difference between veal and beef is that

a. veal is received in quarters while beef is received in whole sides.
b. two major cuts are made from the veal leg, and one major cut is made from the corresponding beef area.
c. the veal hindquarter is separated behind the last rib.
d. veal carcass is much longer than beef carcass.

46. (027) In veal processing, the chine bone is used as a measuring point for separating

a. the three rib corner.
b. the breast from the rib.
c. the shank from the shoulder.
d. the rib and naval from the shoulder.

47. (027) The first step in processing a side of veal is to

a. process the forequarter.
b. process the hindquarter.
c. separate the rib section from shoulder.
d. separate the hindquarter and forequarter.

48. (028) The flank is removed from the veal hindquarter

a. 2 inches from the chine bone.
b. 4 inches from the chine bone.
c. 6 inches from the chine bone.
d. 8 inches from the chine bone.

49. (028) Veal cutlets are processed from the

a. loin.
b. round.
c. sirloin.
d. rump.

50. (029) As it pertains to lamb and beef differences, which of the following statements is correct?

a. A break joint separates the hindsaddle from foresaddle.
b. Lamb carcasses are split lengthwise into sides.
c. The lamb loin yields steaks.
d. A beef hindshank has no break joint.

51. (030) Before processing lamb rib,

a. remove the chine bone.
b. remove the feather bones.
c. score the rib bones.
d. remove the lamb fell.

52. (030) One of the ways to merchandise lamb neck is as

a. lamb stew.
b. lamb roast.
c. lamb chops.
d. mock duck.

53. (030) Mock duck is prepared from the top portion of a lamb

a. shoulder.
b. breast.
c. loin.
d. rib.

54. (030) Which of the following carving procedures differs between American leg of lamb and French leg of lamb?

a. Remove the excess fat.
b. Saw through the backbone every 1/2 inch for easier carving.
c. Remove the meat from the shankbone and scrape the bone free of meat.
d. Merchandise the whole leg of lamb.

55. (031) One common processing step for a 10-pound ham is to

a. cut the ham in half.
b. cut the cushion into breakfast slices.
c. cut center slices up to the aitch bone.
d. remove the cushion from the aitch bone portion.

56. (031) Most hams weighing over 12 pounds are

a. sold whole.
b. sold halved.
c. sold halved after slices are removed.
d. processed into breakfast slices, ham hocks, center slices, and seasoning pieces.

57. (032) The type of pork chops priced higher than the others are

a. end chops.
b. rib chops.
c. blade chops.
d. center-cut chops.

58. (032) To obtain backribs you must first

a. separate the rib bones from the backbone.
b. decide to forego country style ribs.
c. cut the loin in thirds.
d. remove all fat.

59. (033) One similarity in processing slab bacon and salt pork is that both may be

a. sliced and merchandised in one or two pound packages.
b. cut into one or two pound pieces for display.
c. sliced and merchandised in one pound packages.
d. sliced and merchandised in two pound packages.

60. (034) What is the minimum internal temperature for barbecuing pork?

a. 165° F.
b. 175° F.
c. 185° F.
d. 195° F.

61. (035) As it pertains to beef trimmings, which of the following statements is correct?

a. Too much fat in ground meat will result in customer complaints.
b. Dark trimmings should be used in ground meat.
c. All of the fat should be used with ground meat.
d. One inch of fat should be left on retail cuts.

62. (035) What is the preferable method for disposing of unusable bones and fat in the meat department?

a. Dispose of them yourself.
b. Contact sanitary fill personnel.
c. Try to obtain a contract to sell them.
d. Obtain detail personnel to dispose of them.

63. (036) Which of the following states the correct procedure for storing wrapping film?

a. Stack roll tubes on end.
b. Insure relative humidity of 35 to 50 percent for storing packages.
c. Insure temperature between 65° to 75° F for storing all types of film.
d. Store film in a dry place where it will receive direct sunlight.

64. (036) One characteristic of pliofilm is that it

a. contains no elasticity.
b. is coated on one side.
c. must be sealed at a very high temperature.
d. must be sealed at a very low temperature.

65. (037) Handwrap stations

a. cannot be used with automatic scales.
b. do not have a hot cutoff.
c. cannot be used with a manual scaling system.
d. may be either console type or table top type.

66. (037) The automatic scale

a. has a keyboard attachment and a label printer which are electrically interlocked to operate as a unit.
b. automatically weighs, computes, prints, and issues a label to the label activator.
c. contains a dial to set the total price.
d. is a prepack scale.

67. (038) Which of the following elements is most desirable for meat display cases?

a. A front loading case.
b. Meat items arranged by group type.
c. Hand printed display signs.
d. Soft natural subdued blue lighting.

68. (039) An automatic wrapping machine would be classified as

a. operating supplies.
b. category I equipment.
c. category II equipment.
d. miscellaneous equipment.

69. (040) Final accounting for equipment and supplies used in the operation of the meat department is the responsibility of the

a. store manager.
b. commissary officer.
c. services officer.
d. meat department manager.

70. (041) To whom is each (single) commissary officer responsible?

a. The region commander.
b. The complex officer.
c. AFCOMS commander.
d. AFESA commander.

71. (042) Which one of the following items is authorized to be sold in the meat department?

a. Prepackaged frozen, sliced bacon.
b. Prepackaged shortening.
c. Frozen fish.
d. Beef liver.

72. (042) Which of the following statements concerning pretenderized beef is correct?

a. Three types of tenderizing processes are used.
b. Commissaries may purchase name brand tenderized beef.
c. The tenderizing action takes place before the animal is slaughtered.
d. Commissaries cannot stipulate type of tenderizing process desired.

73. (043) A decision as to the amount and types of meat to display would not normally be influenced by

a. holidays.
b. past sales.
c. weather changes.
d. customers preference.

74. (043) What is the most important factor to consider in deciding the amount of meat to display?

a. Holidays.
b. Season.
c. Past sales.
d. Religious customs.

75. (044) Changing the mission of a base could change the number of personnel assigned. Meat purchases should then be

a. increased.
b. decreased.
c. adjusted accordingly.
d. reviewed for past requirements.

76. (045) Shrinkage is a variable percentage of unavoidable loss. What percentage of initial markup is required to cover these losses?

a. 1 1/2 to 2 percent.
b. 2 1/2 to 3 percent.
c. 3 1/2 to 4 percent.
d. 4 1/2 to 5 percent.

77. (046) The maximum percentage of fat allowable in any labeled ground beef is

a. 18 percent.
b. 25 percent.
c. 30 percent.
d. 35 percent.

78. (046) How many ounces of ground beef should be used in testing for fat content?

a. Two.
b. Three.
c. Four.
d. Six.

79. (047) What is the maximum percentage of gain or loss authorized on semiannual inventories?

a. 2 percent.
b. 1 percent.
c. 1/2 of one percent.
d. 0.1 of one percent.

80. (048) The two most important reasons for conducting supervisory inspections are to

a. check the condition of meats and the cleanliness of meatcutters.
b. correct substandard conditions and evaluate the department's operation.
c. check meat processing and control refrigeration temperatures.
d. correct sanitation problems and insure proper wrapping of meat.

81. (049) All of the following should be analyzed in evaluating the effectiveness of a meat department operation except

a. production charts.
b. customer complaints.
c. accounting records.
d. operating hours of the commissary.

82. (050) If a customer complains that some stew meat he/she bought was tough, you would best resolve the problem by

a. calmly explaining that the commissary sells only the best stew meat.
b. calmly cutting new stew meat for her/him.
c. asking how you can serve him/her now.
d. asking how the meat was cooked.

83. (051) Which of the following would be directly affected by the USAF Graduate Evaluation Program?

a. Promotions.
b. Leave schedules.
c. Your job performance.
d. Specialty Training Standards.